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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK, VOLUME 130. A-7 AIRC--ETC(U)
JUL 80 R A LEE
AMRL-TR-75-50-VOL-130

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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK
Volume 130 .
A-7 Aircraft In The AF32A-19 And The AF32A-24
Noise Suppressors, Near and Far-Field Noise .

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Robert A. Lee

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FOR THE COMMANDER



HENNING E. VON GIERKE
Director
Biodynamics and Bioengineering Division
Aerospace Medical Research Laboratory

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The AF32A-19 noise suppressor is made by Koppers Environmental Elements Corporation. The AF32A-24 noise suppressor is made by H. C. DeYoung Company. Both suppressors provide acoustical suppression for the A-7 aircraft during ground runup operations. This report provides measured and extrapolated data defining the acoustic environment produced by this aircraft operating in the suppressors for four engine power configurations. Near-field data | | |

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are reported for 4 locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

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PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107, Technology to Define and Assess Environmental Quality of Noise From Air Force Operations.

The author gratefully acknowledges Mr. John Cole, and Mr. Robert Powell for their assistance in preparing this report, Mr. Keith Kettler for his assistance in acquiring the raw data, Mr. Henry Mohlman and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Norma Peachey for assistance in typing this report.

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INTRODUCTION

The A-7 aircraft, powered by one Allison TF41 A-1 engine, is a single-seat tactical fighter of outstanding target kill capacity. The aircraft is manufactured by Vought Systems Division of LTV Aerospace Corporation and code named the Corsair II. The AF32A-19 noise suppressor is manufactured by Koppers Environmental Elements Corporation. The AF32A-24 noise suppressor is made by the E.C. DeYoung Company. Both suppressors were designed to provide noise level reduction for all A-7 aircraft during ground runup operations.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations in the AF32A-19 and AF32A-24 noise suppressors. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the A-7 aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during ground operations of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. Refer to Volumes 1 and 2 (references 1 and 2) such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight flight crew and passenger noise, near-field ground crew noise, far field community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL, BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to AMRL, BBE, Wright-Patterson AFB, OH 45433, AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application* AMRL-TR-75-50(1), Aerospace Medical Research Laboratory, Wright Patterson Air Force Base, Ohio, 1975.
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far Field Noise*, AMRL-TR-75-50(2), AMRL, WPAFB, OH, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the AF32A-24 noise suppressor system during ground runup operations of the A-7 aircraft. For these tests the aircraft was located in the AF32A-24 noise suppressor at McEntire ANG Base, South Carolina with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the four engine power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the one-third octave band root-mean-square sound pressure using a 4-second integration time to derive a power-averaged level for each location. Figure 1 shows the four near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the A-7 aircraft in the AF32A-24 suppressor at the four ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

TABLE 1
MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

A-7 Aircraft in the AF32A-24 Noise Suppressor
Ground Runup, Test #77-833

Ground Crew Location

- | | |
|---|--------------------------------|
| 1 | Control Cab |
| 2 | Trim Check Adjustment Position |
| 3 | Leak Check Position |
| 4 | Fire Marshal Position |

Aircraft Engine Operation

- | | |
|---|----------------------------|
| A | Idle Power (54.4% RPM) |
| B | 70% |
| C | 85.6% RPM |
| D | Military Power (97.7% RPM) |

Meteorology

- | | |
|--------------|-----------------|
| Temperature | 22.2 C |
| Bar Pressure | .757 M Hg |
| Rel Humidity | 35 % |
| Wind — Speed | 2 M SEC (4 KTS) |
| — Direction | 130 Deg |

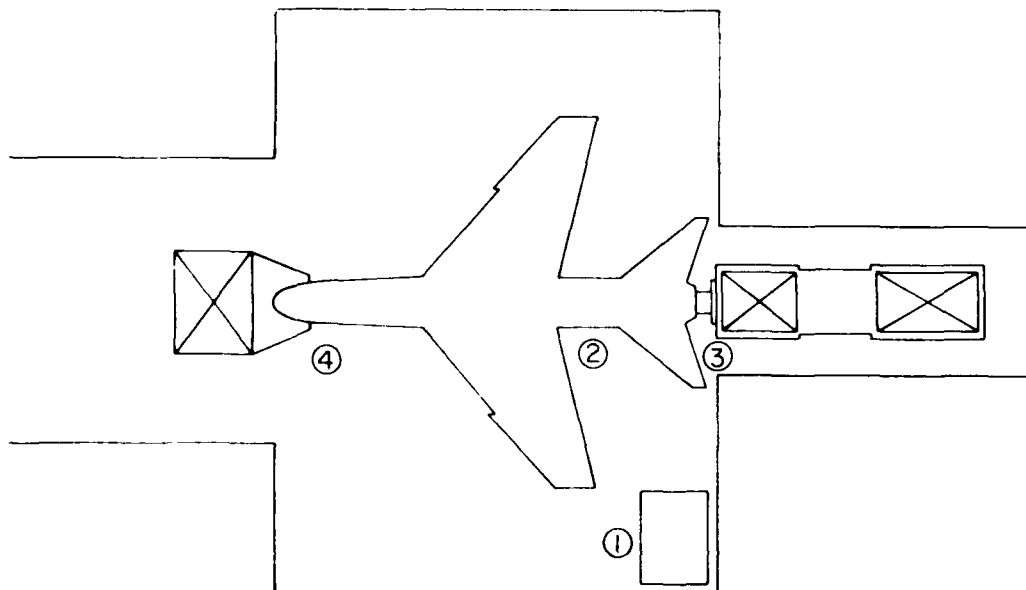


Figure 1. Near-Field Measurement Locations
AF32A-24 Noise Suppressor

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field data during a 1-2 hours test period for each suppressor, thus keeping similar meteorological conditions for the duration of each test. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle for the A-7 aircraft in the AF32A-19 noise suppressor at Rickenbacker ANG, Ohio. Figure 3 shows this same information for the A-7 aircraft in the AF32A-24 noise suppressor at McEntire ANG Base, South Carolina. The center of the 100 meter radius semicircle used in surveying both of these suppressors was on the ground directly below the center of the exhaust stack.

Tables 4 and 5 provide cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in these far-field tests. Also listed in these tables are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of their source where the sound waves spherically diverge and the noise source may be regarded as a point source.

A portable microphone tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

RESULTS

Table 6 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphs in Figure 4 which provides a compact summary of the far-field noise characteristics of the A-7 aircraft operating in the AF32A-19 and AF32A-24 noise suppressors in a standard format.

Estimates of the noise levels for intermediate power settings (e.g., 90% RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, specific interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background electronic noise were eliminated from all figures and tables. No data were acquired at the 170° and 180° locations for the AF32A-24 suppressor due to interference of a wooded area. Values for these locations were extrapolated from the data at 150° and 160° at each power setting.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background electronic noise were generally not significant because the levels were so low.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

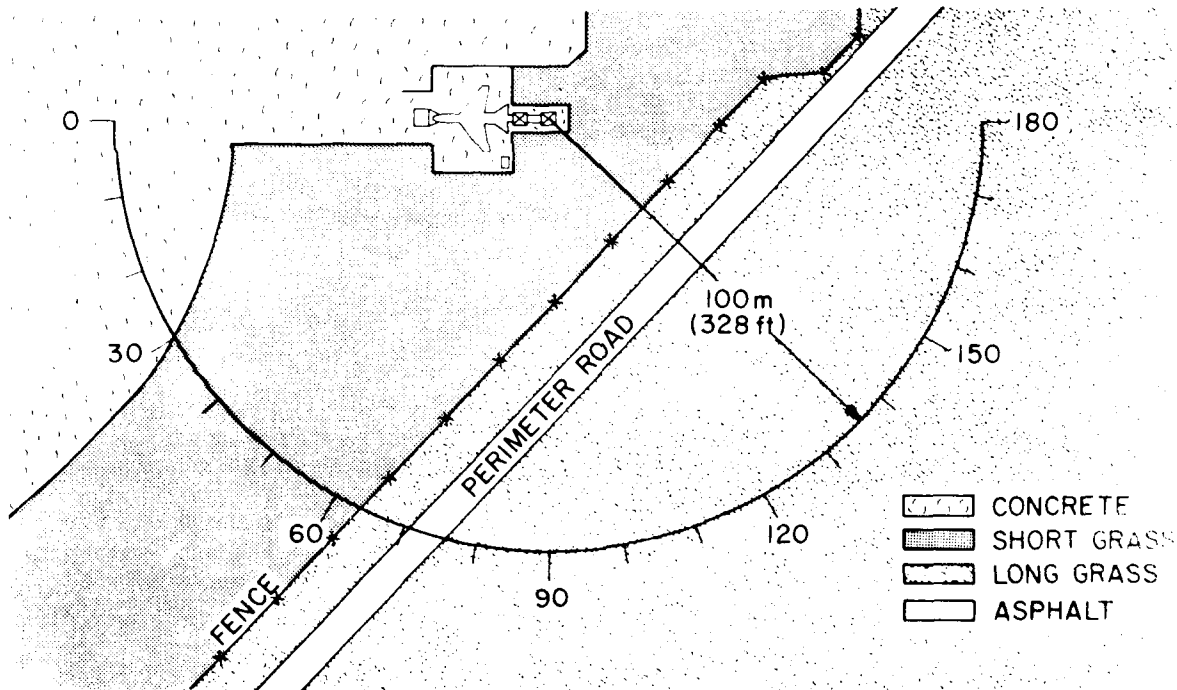


Figure 2. Far-Field Measurement Locations for the AF32A-19 Suppressor at Rickenbacker ANG, Ohio

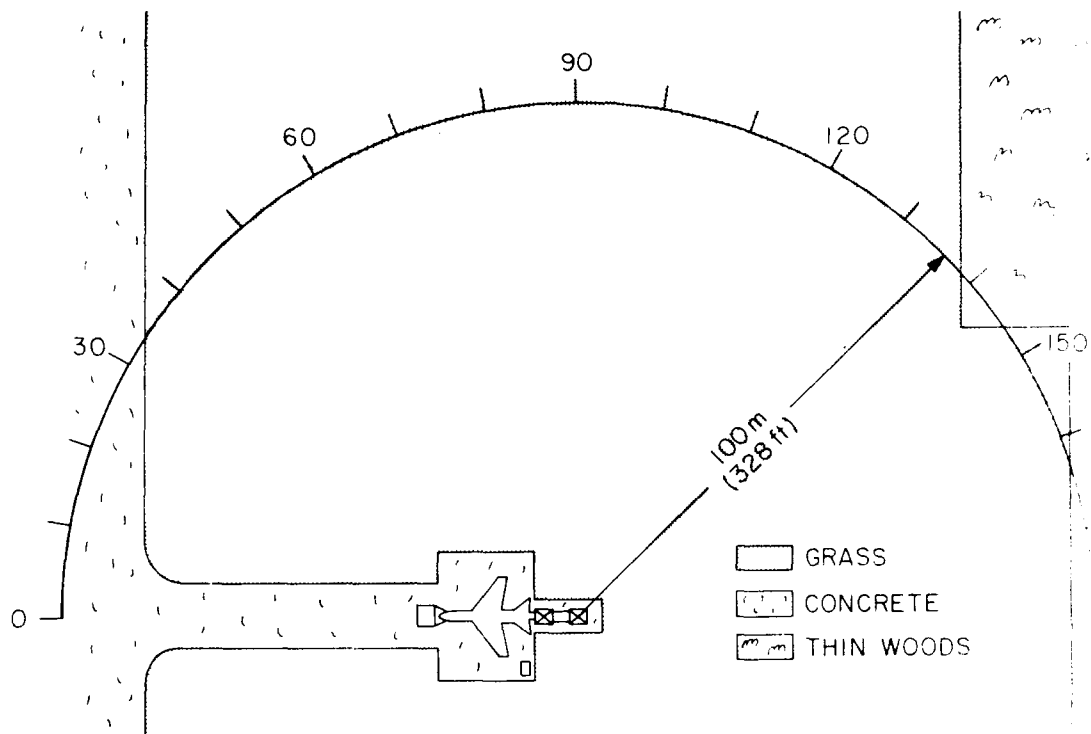


Figure 3. Far-Field Measurement Locations for the AF32A-24 Suppressor at McEntire ANG Base, South Carolina

| TABLE 1 | | MEASURED SOUND PRESSURE LEVEL (DB) | | | | IDENTIFICATION: | | | |
|---------|--|------------------------------------|--|--|--|-----------------|--|--|--|
| 2 | | 1/3 OCTAVE BAND | | | | | | | |
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| TABLE 1 MEASURED SOUND PRESSURE LEVEL (03) | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|--|--|
| 1/3 OCTAVE BAND | | | | | | | | | |
| 2 | | | | | | | | | |
| NOISE SOURCE/SUBJECT: (OPERATION:) | | | | | | | | | |
| A-7 AIRCRAFT IN THE () | | | | | | | | | |
| AF32A-24 SUPPRESSOR () | | | | | | | | | |
| GROUND CREW () | | | | | | | | | |
| NEAR-FIELD NOISE LEVELS () | | | | | | | | | |
| IDENTIFICATION:) | | | | | | | | | |
| OMEGA 3.2 | | | | | | | | | |
| TEST 78-833-001 | | | | | | | | | |
| RUN 02 | | | | | | | | | |
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| PAGE F2 | | | | | | | | | |
| LOCATION/CONDITION | | | | | | | | | |
| 1/C 2/C 3/C 4/C 1/D 2/D 3/D 4/D | | | | | | | | | |
| FREQ (HZ) | | | | | | | | | |
| 25 | 94 | 97 | 98 | 94 | 96 | 99 | 97 | | |
| 31.5 | 93 | 94 | 94 | 94 | 95 | 97 | 98 | | |
| 40 | 91 | 92 | 91 | 93 | 93 | 96 | 98 | | |
| 50 | 90 | 91 | 91 | 92 | 90 | 91 | 94 | | |
| 63 | 88 | 92 | 92 | 92 | 90 | 92 | 95 | | |
| 80 | 90 | 94 | 97 | 92 | 90 | 94 | 93 | | |
| 100 | 91 | 92 | 94 | 87 | 91 | 94 | 90 | | |
| 125 | 90 | 94 | 95 | 89 | 93 | 97 | 92 | | |
| 160 | 91 | 94 | 95 | 92 | 95 | 98 | 96 | | |
| 200 | 92 | 98 | 97 | 93 | 95 | 99 | 97 | | |
| 250 | 88 | 95 | 94 | 95 | 94 | 100 | 98 | | |
| 315 | 87 | 93 | 93 | 94 | 95 | 100 | 98 | | |
| 400 | 88 | 92 | 94 | 94 | 97 | 102 | 99 | | |
| 500 | 92 | 95 | 95 | 95 | 100 | 104 | 100 | | |
| 630 | 90 | 94 | 95 | 93 | 99 | 103 | 100 | | |
| 800 | 93 | 100 | 98 | 94 | 98 | 104 | 101 | | |
| 1000 | 91 | 96 | 98 | 93 | 100 | 105 | 101 | | |
| 1250 | 90 | 96 | 97 | 93 | 97 | 103 | 100 | | |
| 1600 | 92 | 98 | 100 | 94 | 103 | 104 | 101 | | |
| 2000 | 92 | 97 | 98 | 96 | 102 | 103 | 99 | | |
| 2500 | 105 | 112 | 107 | 102 | 102 | 104 | 100 | | |
| 3150 | 97 | 105 | 101 | 99 | 102 | 103 | 99 | | |
| 4000 | 94 | 99 | 100 | 98 | 101 | 108 | 101 | | |
| 5000 | 92 | 98 | 98 | 99 | 99 | 106 | 99 | | |
| 6300 | 92 | 96 | 97 | 98 | 101 | 106 | 97 | | |
| 8000 | 92 | 95 | 97 | 97 | 100 | 106 | 97 | | |
| 10000 | 92 | 94 | 96 | 94 | 100 | 104 | 96 | | |
| OVERALL | 108 | 114 | 112 | 110 | 111 | 117 | 113 | | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2 OCTAVE BAND | | | | | | | | | |
| IDENTIFICATION: | | | | | | | | | |
| OMEGA 3.2 | | | | | | | | | |
| TEST 78-833-001 | | | | | | | | | |
| RUN 02 | | | | | | | | | |
| 28 NOV 79 | | | | | | | | | |
| PAGE J2 | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | |
| A-7 AIRCRAFT IN THE | | | | | | | | | |
| AF32A-24 SUPPRESSOR | | | | | | | | | |
| GROUND CREW | | | | | | | | | |
| NEAR-FIELD NOISE LEVELS | | | | | | | | | |
| LOCATION/CONDITION | | | | | | | | | |
| 1/C 2/C 3/C 4/C 1/D 2/D 3/D 4/D | | | | | | | | | |
| FREQ (HZ) | | | | | | | | | |
| 31.5 | 98 | 99 | 100 | 98 | 100 | 101 | 102 | 102 | 102 |
| 63 | 94 | 97 | 99 | 97 | 95 | 98 | 97 | 97 | 99 |
| 125 | 95 | 98 | 100 | 94 | 98 | 101 | 102 | 102 | 98 |
| 250 | 94 | 100 | 99 | 99 | 99 | 106 | 104 | 104 | 102 |
| 500 | 95 | 98 | 100 | 99 | 103 | 107 | 108 | 108 | 104 |
| 1000 | 96 | 102 | 103 | 98 | 103 | 109 | 109 | 109 | 105 |
| 2000 | 105 | 112 | 108 | 103 | 102 | 107 | 109 | 109 | 105 |
| 4000 | 100 | 106 | 105 | 103 | 104 | 109 | 111 | 111 | 105 |
| 8000 | 97 | 100 | 101 | 101 | 101 | 105 | 110 | 110 | 102 |
| OVERALL | 108 | 114 | 112 | 110 | 111 | 116 | 117 | 117 | 113 |

| TABLE: MEASURES OF HUMAN NOISE EXPOSURE | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----------------|
| IDENTIFICATION: | | | | | | | |
| 3 | | | | | | | |
| NOISE SOURCE/SUBJECT: (OPERATION:) | | | | | | | |
| A-7 AIRCRAFT IN THE | | | | | | | OMEGA 3.2 |
| AF32A-24 SUPPRESSOR | | | | | | | TEST 78-833-001 |
| GROUND CREW | | | | | | | RUN 01 |
| NEAR-FIELD NOISE LEVELS | | | | | | | 28 NOV 79 |
| | | | | | | | PAGE M1 |
| LOCATION/CONDITION | | | | | | | |
| 1/A | 2/A | 3/A | 4/A | 1/B | 2/B | 3/B | 4/B |
| HAZARD/PROTECTION | | | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR | | | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR | | | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (APR 161-35, JULY 73) | | | | | | | |
| NO PROTECTION | | | | | | | |
| OASLC | 99 | 107 | 105 | 108 | 101 | 107 | 107 |
| OASLA | 98 | 105 | 105 | 109 | 100 | 106 | 107 |
| T | 42 | 13 | 13 | 6 | 30 | 11 | 9 |
| MINIMUM QPL EAR MUFFS | | | | | | | |
| OASLA* | 74 | 82 | 73 | 80 | 76 | 81 | 80 |
| T | 960 | 679 | 960 | 960 | 960 | 807 | 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | | | | | |
| OASLA* | 59 | 77 | 74 | 74 | 71 | 76 | 75 |
| T | 960 | 960 | 960 | 960 | 960 | 960 | 960 |
| V-51R EAR PLUGS | | | | | | | |
| OASLA* | 72 | 81 | 78 | 82 | 72 | 78 | 77 |
| T | 960 | 807 | 960 | 679 | 960 | 960 | 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | | | | | |
| OASLA* | 59 | 65 | 66 | 70 | 58 | 65 | 63 |
| T | 960 | 960 | 960 | 960 | 960 | 960 | 960 |
| H-133 GROUND COMMUNICATION UNIT | | | | | | | |
| OASLA* | 70 | 76 | 78 | 81 | 73 | 79 | 80 |
| T | 960 | 960 | 960 | 807 | 960 | 960 | 960 |
| COMMUNICATION | | | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | | | |
| PSIL | 92 | 100 | 98 | 98 | 92 | 99 | 96 |
| ANNNOYANCE | | | | | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNOB) | | | | | | | |
| TONE CORRECTION (C IN DB) | | | | | | | |
| PNLT | 114 | 122 | 120 | 124 | 115 | 121 | 123 |
| C | 5 | 5 | 3 | 5 | 2 | 1 | 2 |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

| TABLE 3 MEASURES OF HUMAN NOISE EXPOSURE | | | | | IDENTIFICATION | |
|--|--|--|--|--|----------------|-----|
| | | | | | 1 | 2 |
| | | | | | 3 | 4 |
| | | | | | 5 | 6 |
| | | | | | 7 | 8 |
| | | | | | 9 | 10 |
| | | | | | 11 | 12 |
| | | | | | 13 | 14 |
| | | | | | 15 | 16 |
| | | | | | 17 | 18 |
| | | | | | 19 | 20 |
| | | | | | 21 | 22 |
| | | | | | 23 | 24 |
| | | | | | 25 | 26 |
| | | | | | 27 | 28 |
| | | | | | 29 | 30 |
| | | | | | 31 | 32 |
| | | | | | 33 | 34 |
| | | | | | 35 | 36 |
| | | | | | 37 | 38 |
| | | | | | 39 | 40 |
| | | | | | 41 | 42 |
| | | | | | 43 | 44 |
| | | | | | 45 | 46 |
| | | | | | 47 | 48 |
| | | | | | 49 | 50 |
| | | | | | 51 | 52 |
| | | | | | 53 | 54 |
| | | | | | 55 | 56 |
| | | | | | 57 | 58 |
| | | | | | 59 | 60 |
| | | | | | 61 | 62 |
| | | | | | 63 | 64 |
| | | | | | 65 | 66 |
| | | | | | 67 | 68 |
| | | | | | 69 | 70 |
| | | | | | 71 | 72 |
| | | | | | 73 | 74 |
| | | | | | 75 | 76 |
| | | | | | 77 | 78 |
| | | | | | 79 | 80 |
| | | | | | 81 | 82 |
| | | | | | 83 | 84 |
| | | | | | 85 | 86 |
| | | | | | 87 | 88 |
| | | | | | 89 | 90 |
| | | | | | 91 | 92 |
| | | | | | 93 | 94 |
| | | | | | 95 | 96 |
| | | | | | 97 | 98 |
| | | | | | 99 | 100 |
| | | | | | 101 | 102 |
| | | | | | 103 | 104 |
| | | | | | 105 | 106 |
| | | | | | 107 | 108 |
| | | | | | 109 | 110 |
| | | | | | 111 | 112 |
| | | | | | 113 | 114 |
| | | | | | 115 | 116 |
| | | | | | 117 | 118 |
| | | | | | 119 | 120 |
| | | | | | 121 | 122 |
| | | | | | 123 | 124 |
| | | | | | 125 | 126 |
| | | | | | 127 | 128 |
| | | | | | 129 | 130 |
| | | | | | 131 | 132 |
| | | | | | 133 | 134 |
| | | | | | 135 | 136 |
| | | | | | 137 | 138 |
| | | | | | 139 | 140 |
| | | | | | 141 | 142 |
| | | | | | 143 | 144 |
| | | | | | 145 | 146 |
| | | | | | 147 | 148 |
| | | | | | 149 | 150 |
| | | | | | 151 | 152 |
| | | | | | 153 | 154 |
| | | | | | 155 | 156 |
| | | | | | 157 | 158 |
| | | | | | 159 | 160 |
| | | | | | 161 | 162 |
| | | | | | 163 | 164 |
| | | | | | 165 | 166 |
| | | | | | 167 | 168 |
| | | | | | 169 | 170 |
| | | | | | 171 | 172 |
| | | | | | 173 | 174 |
| | | | | | 175 | 176 |
| | | | | | 177 | 178 |
| | | | | | 179 | 180 |
| | | | | | 181 | 182 |
| | | | | | 183 | 184 |
| | | | | | 185 | 186 |
| | | | | | 187 | 188 |
| | | | | | 189 | 190 |
| | | | | | 191 | 192 |
| | | | | | 193 | 194 |
| | | | | | 195 | 196 |
| | | | | | 197 | 198 |
| | | | | | 199 | 200 |
| | | | | | 201 | 202 |
| | | | | | 203 | 204 |
| | | | | | 205 | 206 |
| | | | | | 207 | 208 |
| | | | | | 209 | 210 |
| | | | | | 211 | 212 |
| | | | | | 213 | 214 |
| | | | | | 215 | 216 |
| | | | | | 217 | 218 |
| | | | | | 219 | 220 |
| | | | | | 221 | 222 |
| | | | | | 223 | 224 |
| | | | | | 225 | 226 |
| | | | | | 227 | 228 |
| | | | | | 229 | 230 |
| | | | | | 231 | 232 |
| | | | | | 233 | 234 |
| | | | | | 235 | 236 |
| | | | | | 237 | 238 |
| | | | | | 239 | 240 |
| | | | | | 241 | 242 |
| | | | | | 243 | 244 |
| | | | | | 245 | 246 |
| | | | | | 247 | 248 |
| | | | | | 249 | 250 |
| | | | | | 251 | 252 |
| | | | | | 253 | 254 |
| | | | | | 255 | 256 |
| | | | | | 257 | 258 |
| | | | | | 259 | 260 |
| | | | | | 261 | 262 |
| | | | | | 263 | 264 |
| | | | | | 265 | 266 |
| | | | | | 267 | 268 |
| | | | | | 269 | 270 |
| | | | | | 271 | 272 |
| | | | | | 273 | 274 |
| | | | | | 275 | 276 |
| | | | | | 277 | 278 |
| | | | | | 279 | 280 |
| | | | | | 281 | 282 |
| | | | | | 283 | 284 |
| | | | | | 285 | 286 |
| | | | | | 287 | 288 |
| | | | | | 289 | 290 |
| | | | | | 291 | 292 |
| | | | | | 293 | 294 |
| | | | | | 295 | 296 |
| | | | | | 297 | 298 |
| | | | | | 299 | 300 |
| | | | | | 301 | 302 |
| | | | | | 303 | 304 |
| | | | | | 305 | 306 |
| | | | | | 307 | 308 |
| | | | | | 309 | 310 |
| | | | | | 311 | 312 |
| | | | | | 313 | 314 |
| | | | | | 315 | 316 |
| | | | | | 317 | 318 |
| | | | | | 319 | 320 |
| | | | | | 321 | 322 |
| | | | | | 323 | 324 |
| | | | | | 325 | 326 |
| | | | | | 327 | 328 |
| | | | | | 329 | 330 |
| | | | | | 331 | 332 |
| | | | | | 333 | 334 |
| | | | | | 335 | 336 |
| | | | | | 337 | 338 |
| | | | | | 339 | 340 |
| | | | | | 341 | 342 |
| | | | | | 343 | 344 |
| | | | | | 345 | 346 |
| | | | | | 347 | 348 |
| | | | | | 349 | 350 |
| | | | | | 351 | 352 |
| | | | | | 353 | 354 |
| | | | | | 355 | 356 |
| | | | | | 357 | 358 |
| | | | | | 359 | 360 |
| | | | | | 361 | 362 |
| | | | | | 363 | 364 |

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

A-7 Aircraft in the AF32A-19 Noise Suppressor
Rickenbacker ANG Base, Ohio

Aircraft Engine Operation

| | |
|----------------|---------------------------|
| Idle Power | Single Engine 55 % RPM |
| 70% RPM Runup | Single Engine 70 % RPM |
| 85% RPM Runup | Single Engine 85 % RPM |
| Military Power | Single Engine 96 % RPM |

Meteorology

| | |
|--------------|-----------|
| Temperature | 28.9 C |
| Bar Pressure | .766 M Hg |
| Rel Humidity | 28 % |
| Wind — Speed | Calm |
| — Direction | Calm |

TABLE 5
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

A-7 Aircraft in the AF32A-24 Noise Suppressor
McEntire ANG Base, South Carolina

Aircraft Engine Operation

| | |
|----------------|--|
| Idle Power | Single Engine 54.5 % RPM 438 C, Exhaust Gas Temperature 1000 LBS HR Fuel Flow |
| 70% RPM Runup | Single Engine 70.0 % RPM 416 C, EGT 1000 LBS HR, FF |
| 85% RPM Runup | Single Engine 85.6% RPM 400 C, EGT 3700 LBS HR, FF |
| Military Power | Single Engine 97.7 % RPM 572 C, EGT 9000 LBS HR, FF |

Meteorology

| | |
|--------------|-----------------|
| Temperature | 22.2 C |
| Bar Pressure | 30.757 M Hg |
| Rel Humidity | 35 % |
| Wind - Speed | 2 M SEC (4 KTS) |
| - Direction | 130 Deg |

| TABLE 1 | | MEASURED SOUND PRESSURE LEVEL (dB) | | | | | | | | | | | | | | | | IDENTIFICATION | |
|---------|--|------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------------|----|
| | | 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | |
| | | DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | |
| | | NOISE SOURCE/SUBJECT | | | | | | | | | | | | | | | | | |
| | | (OPERATION) | | | | | | | | | | | | | | | | | |
| | | (A-70 AIRCRAFT IN THE) | | | | | | | | | | | | | | | | | |
| | | (IDLE PWR, 55% RPM) | | | | | | | | | | | | | | | | | |
| | | (SINGLE ENGINE) | | | | | | | | | | | | | | | | | |
| | | (SUPPRESSED GROUND PUNUP) | | | | | | | | | | | | | | | | | |
| | | (ENGINE TF41-A-1) | | | | | | | | | | | | | | | | | |
| | | (FAR FIELD NOISE) | | | | | | | | | | | | | | | | | |
| | | TEMP = 23 C | | | | | | | | | | | | | | | | | |
| | | BAR PRESS = 766 M Hg | | | | | | | | | | | | | | | | | |
| | | REL HUMID = 28 % | | | | | | | | | | | | | | | | | |
| | | PAGE 2 | | | | | | | | | | | | | | | | | |
| | | TEST 77-833-031 | | | | | | | | | | | | | | | | | |
| | | RUN 81 | | | | | | | | | | | | | | | | | |
| | | METEOROLOGICAL | | | | | | | | | | | | | | | | | |
| | | ANGLE (DEGREES) | | | | | | | | | | | | | | | | | |
| | | FREQ | | | | | | | | | | | | | | | | | |
| | | (Hz) | | | | | | | | | | | | | | | | | |
| | | 25 | 65 | 67 | 64 | 67 | 65 | 67 | 66 | 65 | 64 | 63 | 61 | 63 | 64 | 65 | 63 | 65 | 66 |
| | | 31.5 | 71 | 73 | 69 | 72 | 70 | 71 | 70 | 67 | 68 | 67 | 68 | 67 | 67 | 66 | 68 | 67 | 66 |
| | | 40 | 73 | 79 | 78 | 78 | 79 | 81 | 79 | 80 | 77 | 75 | 73 | 74 | 75 | 71 | 71 | 70 | 71 |
| | | 50 | 80 | 79 | 75 | 78 | 85 | 81 | 81 | 81 | 81 | 81 | 81 | 81 | 81 | 77 | 74 | 74 | 78 |
| | | 63 | 77 | 76 | 76 | 79 | 76 | 76 | 78 | 76 | 76 | 77 | 79 | 81 | 80 | 78 | 73 | 71 | 69 |
| | | 80 | 70 | 71 | 72 | 72 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 66 | 63 |
| | | 100 | 64 | 63 | 65 | 66 | 67 | 66 | 64 | 63 | 64 | 68 | 68 | 63 | 62 | 64 | 66 | 58 | 57 |
| | | 125 | 66 | 62 | 67 | 66 | 66 | 64 | 64 | 65 | 65 | 66 | 66 | 63 | 60 | 58 | 58 | 58 | 57 |
| | | 150 | 60 | 60 | 66 | 60 | 60 | 60 | 60 | 61 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 58 | 58 |
| | | 200 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| | | 250 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| | | 315 | 60 | 60 | 58 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | | 400 | 62 | 62 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | | 500 | 62 | 62 | 60 | 61 | 52 | 54 | 51 | 57 | 56 | 54 | 53 | 53 | 50 | 49 | 49 | 49 | 49 |
| | | 630 | 58 | 60 | 58 | 57 | 52 | 54 | 54 | 53 | 53 | 53 | 53 | 52 | 52 | 52 | 52 | 52 | 52 |
| | | 800 | 59 | 61 | 58 | 60 | 55 | 57 | 58 | 56 | 55 | 55 | 55 | 55 | 55 | 54 | 54 | 54 | 54 |
| | | 1000 | 56 | 59 | 58 | 60 | 57 | 59 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| | | 1250 | 59 | 64 | 63 | 66 | 60 | 65 | 64 | 64 | 66 | 61 | 69 | 63 | 63 | 65 | 65 | 64 | 62 |
| | | 1600 | 52 | 57 | 58 | 60 | 53 | 63 | 60 | 61 | 60 | 57 | 60 | 60 | 61 | 60 | 57 | 54 | 56 |
| | | 2000 | 52 | 59 | 59 | 59 | 53 | 61 | 60 | 60 | 62 | 58 | 60 | 63 | 57 | 63 | 59 | 57 | 54 |
| | | 2500 | 50 | 59 | 64 | 61 | 61 | 61 | 59 | 59 | 59 | 56 | 56 | 57 | 55 | 56 | 55 | 53 | 55 |
| | | 3150 | 46 | 58 | 56 | 59 | 57 | 58 | 55 | 56 | 55 | 52 | 52 | 51 | 50 | 51 | 50 | 48 | 51 |
| | | 4000 | 45 | 55 | 56 | 57 | 57 | 58 | 55 | 56 | 55 | 50 | 49 | 48 | 48 | 49 | 48 | 47 | 51 |
| | | 5000 | 43 | 54 | 54 | 55 | 54 | 54 | 52 | 53 | 53 | 47 | 45 | 44 | 44 | 46 | 45 | 44 | 47 |
| | | 6300 | 37 | 47 | 48 | 50 | 49 | 50 | 47 | 49 | 48 | 42 | 41 | 40 | 38 | 39 | 41 | 42 | 42 |
| | | 8000 | 34 | 43 | 45 | 46 | 46 | 45 | 44 | 45 | 44 | 38 | 36 | 36 | 34 | 36 | 36 | 36 | 37 |
| | | 10000 | 29 | 38 | 39 | 40 | 41 | 39 | 38 | 38 | 37 | 31 | 29 | 29 | 28 | 26 | 30 | 32 | 31 |
| | | OVERALL | 84 | 84 | 82 | 84 | 87 | 85 | 85 | 85 | 84 | 84 | 84 | 84 | 84 | 81 | 79 | 78 | 80 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | | | IDENTIFICATION: |
|---|-----------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----------------------|
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | OMEGA 1.4 |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | TEST 78-833-001 |
| (OPERATION:) | | | | | | | | | | | | | | | | | RUN 01 |
| (A-7 AIRCRAFT IN THE) | | | | | | | | | | | | | | | | | |
| (AF32A-24 SUPPRESSOR) | | | | | | | | | | | | | | | | | TEMP = 22 C |
| (ENGINE TF41-A-1) | | | | | | | | | | | | | | | | | BAR PRESS = .757 M HG |
| (FAR-FIELD NOISE) | | | | | | | | | | | | | | | | | REL HUMID = 35 % |
| () | | | | | | | | | | | | | | | | | PAGE 2 |
| FREQ | ANGLE (DEGREES) | | | | | | | | | | | | | | | | |
| (HZ) | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 180 |
| 25 | 70 | 70 | 71 | 73 | 72 | 74 | 73 | 76 | 75 | 74 | 71 | 67 | 65 | 64 | 64 | 66 | 65 |
| 31.5 | 69 | 68 | 67 | 71 | 70 | 72 | 72 | 74 | 71 | 71 | 68 | 65 | 65 | 60 | 67 | 69 | 69 |
| 40 | 67 | 68 | 67 | 68 | 69 | 68 | 68 | 68 | 63 | 64 | 64 | 63 | 65 | 65 | 65 | 64 | 65 |
| 50 | 71 | 71 | 70 | 65 | 65 | 66 | 68 | 63 | 63 | 61 | 60 | 60 | 64 | 62 | 61 | 59 | 62 |
| 63 | 68 | 66 | 66 | 64 | 62 | 62 | 59 | 59 | 57 | 59 | 59 | 61 | 61 | 58 | 59 | 60 | 60 |
| 80 | 70 | 69 | 70 | 71 | 67 | 65 | 59 | 50 | 54 | 63 | 58 | 53 | 52 | 54 | 53 | 51 | 51 |
| 100 | 57 | 58 | 61 | 60 | 58 | 56 | 58 | 50 | 54 | 55 | 54 | 53 | 52 | 54 | 53 | 51 | 51 |
| 125 | 58 | 59 | 61 | 58 | 62 | 58 | 60 | 62 | 60 | 62 | 60 | 55 | 56 | 59 | 56 | 57 | 57 |
| 160 | 54 | 54 | 55 | 54 | 55 | 52 | 53 | 52 | 49 | 53 | 52 | 49 | 46 | 47 | 47 | 50 | 50 |
| 200 | 55 | 54 | 55 | 51 | 53 | 52 | 52 | 52 | 51 | 50 | 48 | 50 | 47 | 46 | 46 | 49 | 49 |
| 250 | 54 | 52 | 52 | 51 | 50 | 49 | 51 | 49 | 47 | 50 | 50 | 46 | 45 | 46 | 45 | 46 | 46 |
| 315 | 52 | 50 | 50 | 45 | 44 | 44 | 44 | 48 | 44 | 48 | 50 | 43 | 43 | 42 | 42 | 44 | 44 |
| 400 | 51 | 47 | 50 | 43 | 46 | 44 | 44 | 47 | 44 | 46 | 50 | 43 | 43 | 42 | 43 | 45 | 45 |
| 500 | 54 | 53 | 55 | 46 | 49 | 46 | 48 | 51 | 45 | 56 | 56 | 49 | 46 | 47 | 46 | 51 | 51 |
| 630 | 49 | 47 | 48 | | | | | 45 | 45 | 49 | 52 | 47 | 45 | 47 | 46 | 46 | 46 |
| 800 | 51 | 47 | 47 | | | | | 48 | 45 | 52 | 54 | 49 | 45 | 46 | 47 | 45 | 45 |
| 1000 | 50 | 47 | 46 | | | | | 45 | 46 | 52 | 55 | 49 | 45 | 46 | 47 | 46 | 46 |
| 1250 | 64 | 57 | 57 | 50 | 53 | 50 | 54 | 53 | 55 | 64 | 61 | 53 | 53 | 51 | 53 | 61 | 61 |
| 1600 | 51 | 48 | 47 | 44 | 49 | 47 | 53 | 47 | 49 | 52 | 56 | 48 | 43 | 44 | 45 | 46 | 46 |
| 2000 | 49 | 45 | 45 | 42 | 46 | 45 | 47 | 45 | 45 | 50 | 50 | 45 | 42 | 42 | 42 | 44 | 44 |
| 2500 | 47 | 43 | 45 | 40 | 43 | 44 | 44 | 44 | 43 | 50 | 49 | 44 | 40 | 41 | 43 | 44 | 44 |
| 3150 | 44 | 40 | 41 | 36 | 39 | 40 | 41 | 39 | 39 | 47 | 43 | 39 | 35 | 35 | 36 | 40 | 40 |
| 4000 | 45 | 39 | 40 | | 39 | 38 | 40 | 40 | 37 | 46 | 44 | 37 | | | 37 | 41 | 41 |
| 5000 | 40 | 36 | 37 | | | | | 37 | 37 | 45 | 44 | 42 | | | 36 | 41 | 41 |
| 6300 | 38 | | | | | | | | | 42 | | | | | 38 | 38 | 38 |
| 8000 | | | | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | | | | |
| OVERALL | 77 | 77 | 77 | 77 | 76 | 77 | 77 | 79 | 77 | 77 | 75 | 71 | 71 | 71 | 71 | 72 | 73 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | | | IDENTIFICATION | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-------------------|--|
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | |) OMEGA 1.4 | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | |) TEST 77-833-001 | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | |) RUN 02 | |
| (OPERATION:) METEOROLOGY: | | | | | | | | | | | | | | | | | | |
| (A-70 AIRCRAFT IN THE) TEMP = 29 C | | | | | | | | | | | | | | | | | | |
| (AF32A-19 SUPPRESSOR) SINGLE ENGINE) BAR PRESS = .766 M Hg | | | | | | | | | | | | | | | | |) 20 NOV 79 | |
| (ENGINE TF41-A-1) SUPPRESSED GROUND RUNUP) REL HUMID = 28 % | | | | | | | | | | | | | | | | | | |
| (FAR FIELD NOISE) | | | | | | | | | | | | | | | | |) PAGE 2 | |
| FREQ | | | | | | | | | | | | | | | | | | |
| (HZ) | | | | | | | | | | | | | | | | | ANGLE (DEGREES) | |
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| 8000 37 46 50 51 | | | | | | | | | | | | | | | | | 48 | |
| 10000 34 39 44 44 | | | | | | | | | | | | | | | | | 41 | |
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| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | | | IDENTIFICATION: | | |
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| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | | | |
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< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | | | |
| A-70 AIRCRAFT IN THE | | | | | | | | | | | | | | | | | | | |
| AF32A-19 SUPPRESSOR | | | | | | | | | | | | | | | | | | | |
| ENGINE TF41-A-1 | | | | | | | | | | | | | | | | | | | |
| FAR FIELD NOISE | | | | | | | | | | | | | | | | | | | |
| OPERATION: | | | | | | | | | | | | | | | | | | | |
| (85% RPM, ENGINE RUNUP | | | | | | | | | | | | | | | | | | | |
| (SINGLE ENGINE | | | | | | | | | | | | | | | | | | | |
| (SUPPRESSED GROUND RUNUP | | | | | | | | | | | | | | | | | | | |
| TEMP = 29 C | | | | | | | | | | | | | | | | | | | |
| BAR PRESS = .766 M Hg | | | | | | | | | | | | | | | | | | | |
| REL HUMID = 28 % | | | | | | | | | | | | | | | | | | | |
| METEOROLOGY: | | | | | | | | | | | | | | | | | | | |
| PAGE 2 | | | | | | | | | | | | | | | | | | | |
| IDENTIFICATION: | | | | | | | | | | | | | | | | | | | |
| OMEGA 1.4 | | | | | | | | | | | | | | | | | | | |
| TEST 77-833-001 | | | | | | | | | | | | | | | | | | | |
| RUN 03 | | | | | | | | | | | | | | | | | | | |
| 20 NOV 79 | | | | | | | | | | | | | | | | | | | |
| ANGLE (DEGREES) | | | | | | | | | | | | | | | | | | | |
| FREQ | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| (HZ) | | | | | | | | | | | | | | | | | | | |
| 25 | 72 | 71 | 71 | 72 | 71 | 71 | 70 | 72 | 73 | 72 | 74 | 73 | 72 | 72 | 73 | 73 | 72 | 71 | 72 |
| 31.5 | 73 | 72 | 75 | 73 | 76 | 74 | 74 | 75 | 76 | 75 | 76 | 75 | 76 | 75 | 77 | 75 | 73 | 75 | 74 |
| 40 | 81 | 81 | 81 | 82 | 82 | 83 | 81 | 81 | 80 | 80 | 79 | 79 | 79 | 80 | 82 | 81 | 79 | 82 | 81 |
| 50 | 81 | 81 | 82 | 83 | 82 | 83 | 80 | 83 | 81 | 80 | 80 | 81 | 82 | 84 | 84 | 83 | 78 | 80 | 82 |
| 63 | 80 | 79 | 79 | 82 | 81 | 82 | 83 | 80 | 81 | 82 | 82 | 80 | 80 | 82 | 82 | 80 | 74 | 74 | 79 |
| 80 | 81 | 79 | 81 | 82 | 80 | 79 | 80 | 82 | 81 | 82 | 82 | 80 | 78 | 78 | 80 | 77 | 68 | 69 | 73 |
| 100 | 82 | 81 | 83 | 83 | 79 | 77 | 77 | 79 | 78 | 77 | 78 | 77 | 77 | 76 | 77 | 78 | 73 | 72 | 69 |
| 125 | 80 | 77 | 82 | 79 | 77 | 74 | 73 | 77 | 75 | 73 | 74 | 73 | 73 | 72 | 73 | 75 | 71 | 70 | 67 |
| 160 | 83 | 85 | 88 | 82 | 81 | 78 | 80 | 82 | 81 | 80 | 75 | 76 | 72 | 71 | 71 | 74 | 72 | 72 | 70 |
| 200 | 86 | 88 | 86 | 83 | 79 | 79 | 79 | 79 | 79 | 76 | 73 | 71 | 70 | 69 | 68 | 72 | 70 | 69 | 69 |
| 250 | 93 | 94 | 94 | 89 | 87 | 82 | 82 | 84 | 81 | 77 | 74 | 70 | 71 | 75 | 69 | 74 | 73 | 68 | 69 |
| 315 | 85 | 86 | 83 | 78 | 76 | 74 | 71 | 75 | 75 | 67 | 66 | 64 | 67 | 67 | 66 | 67 | 62 | 64 | 68 |
| 400 | 84 | 87 | 81 | 81 | 78 | 73 | 70 | 69 | 69 | 67 | 67 | 66 | 66 | 66 | 66 | 67 | 62 | 63 | 63 |
| 500 | 79 | 84 | 79 | 83 | 76 | 74 | 70 | 71 | 69 | 66 | 65 | 65 | 67 | 69 | 67 | 69 | 65 | 65 | 64 |
| 630 | 81 | 82 | 79 | 80 | 74 | 73 | 71 | 72 | 71 | 69 | 68 | 70 | 70 | 68 | 68 | 69 | 65 | 65 | 62 |
| 800 | 80 | 81 | 77 | 82 | 78 | 77 | 74 | 75 | 73 | 72 | 71 | 72 | 75 | 74 | 72 | 73 | 68 | 68 | 66 |
| 1000 | 81 | 82 | 77 | 82 | 81 | 79 | 77 | 78 | 76 | 75 | 75 | 76 | 76 | 77 | 76 | 76 | 71 | 70 | 68 |
| 1250 | 77 | 80 | 77 | 81 | 81 | 79 | 77 | 78 | 76 | 75 | 75 | 75 | 75 | 76 | 76 | 77 | 72 | 69 | 65 |
| 1600 | 72 | 78 | 76 | 81 | 81 | 79 | 75 | 76 | 75 | 74 | 74 | 76 | 75 | 75 | 75 | 75 | 70 | 68 | 63 |
| 2000 | 70 | 77 | 76 | 79 | 80 | 79 | 75 | 74 | 73 | 71 | 73 | 73 | 74 | 72 | 72 | 73 | 68 | 66 | 62 |
| 2500 | 68 | 76 | 76 | 79 | 80 | 82 | 78 | 77 | 75 | 72 | 72 | 71 | 72 | 72 | 72 | 72 | 68 | 66 | 63 |
| 3150 | 66 | 74 | 74 | 77 | 77 | 76 | 73 | 73 | 72 | 67 | 67 | 68 | 68 | 68 | 67 | 69 | 65 | 63 | 60 |
| 4000 | 63 | 71 | 73 | 75 | 73 | 71 | 70 | 70 | 67 | 64 | 63 | 64 | 65 | 65 | 65 | 68 | 62 | 59 | 56 |
| 5000 | 58 | 67 | 69 | 70 | 69 | 68 | 65 | 65 | 62 | 60 | 58 | 60 | 61 | 61 | 61 | 64 | 58 | 55 | 52 |
| 6300 | 53 | 62 | 65 | 64 | 63 | 62 | 61 | 62 | 58 | 56 | 53 | 56 | 57 | 56 | 56 | 60 | 54 | 52 | 48 |
| 8000 | 49 | 56 | 59 | 59 | 59 | 56 | 56 | 56 | 52 | 50 | 47 | 49 | 50 | 49 | 51 | 56 | 48 | 45 | 42 |
| 10000 | 44 | 50 | 52 | 51 | 52 | 49 | 49 | 47 | 44 | 41 | 39 | 41 | 42 | 41 | 44 | 50 | 40 | 36 | 34 |
| OVERALL | 96 | 98 | 97 | 95 | 94 | 92 | 91 | 92 | 91 | 90 | 89 | 89 | 89 | 89 | 90 | 89 | 85 | 86 | 87 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATION: | | | | | | | | | | | | | | | | |
|---|----|-----------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|---------|
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | | |
| A-70 AIRCRAFT IN THE | | | | | | | | | | | | | | | | | | |
| AF32A-19 SUPPRESSOR | | | | | | | | | | | | | | | | | | |
| ENGINE TF41-A-1 | | | | | | | | | | | | | | | | | | |
| FAR FIELD NOISE | | | | | | | | | | | | | | | | | | |
| FREQ (HZ) | | ANGLE (DEGREES) | | | | | | | | | | | | | | | | |
| | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 180 |
| 25 | 78 | 76 | 76 | 77 | 78 | 77 | 80 | 78 | 79 | 80 | 80 | 79 | 76 | 77 | 78 | 78 | 78 | 77 |
| 31.5 | 78 | 77 | 79 | 78 | 80 | 80 | 82 | 81 | 80 | 80 | 81 | 79 | 78 | 79 | 79 | 78 | 77 | 78 |
| 40 | 82 | 83 | 83 | 84 | 84 | 85 | 83 | 85 | 93 | 84 | 84 | 83 | 82 | 82 | 83 | 83 | 83 | 85 |
| 50 | 87 | 87 | 87 | 88 | 88 | 88 | 87 | 87 | 85 | 85 | 84 | 86 | 86 | 84 | 86 | 86 | 86 | 86 |
| 63 | 83 | 83 | 83 | 85 | 87 | 87 | 86 | 85 | 86 | 84 | 85 | 84 | 84 | 82 | 84 | 83 | 81 | 83 |
| 80 | 79 | 79 | 80 | 81 | 81 | 83 | 84 | 86 | 95 | 86 | 83 | 84 | 82 | 81 | 80 | 77 | 74 | 73 |
| 100 | 84 | 82 | 84 | 82 | 81 | 82 | 82 | 84 | 84 | 84 | 81 | 82 | 79 | 77 | 79 | 78 | 76 | 73 |
| 125 | 84 | 80 | 84 | 82 | 81 | 81 | 79 | 80 | 79 | 78 | 76 | 75 | 76 | 76 | 75 | 76 | 77 | 74 |
| 160 | 81 | 81 | 83 | 79 | 77 | 77 | 78 | 78 | 77 | 75 | 72 | 71 | 71 | 71 | 70 | 71 | 72 | 71 |
| 200 | 83 | 84 | 85 | 79 | 75 | 75 | 74 | 76 | 74 | 70 | 71 | 68 | 68 | 68 | 69 | 70 | 70 | 71 |
| 250 | 78 | 83 | 84 | 77 | 73 | 73 | 74 | 75 | 73 | 73 | 73 | 75 | 71 | 72 | 72 | 67 | 67 | 69 |
| 315 | 85 | 86 | 85 | 78 | 76 | 73 | 77 | 76 | 74 | 74 | 77 | 72 | 72 | 72 | 72 | 70 | 66 | 69 |
| 400 | 89 | 91 | 88 | 83 | 79 | 74 | 76 | 74 | 73 | 75 | 76 | 72 | 74 | 73 | 74 | 70 | 66 | 68 |
| 500 | 83 | 86 | 87 | 84 | 82 | 76 | 77 | 76 | 75 | 75 | 75 | 74 | 74 | 75 | 76 | 72 | 67 | 67 |
| 630 | 82 | 83 | 85 | 86 | 81 | 79 | 77 | 77 | 77 | 75 | 77 | 76 | 76 | 75 | 76 | 72 | 67 | 67 |
| 800 | 82 | 81 | 81 | 82 | 81 | 79 | 79 | 79 | 78 | 77 | 79 | 79 | 79 | 78 | 79 | 75 | 70 | 73 |
| 1000 | 78 | 79 | 81 | 83 | 82 | 81 | 82 | 81 | 79 | 81 | 81 | 80 | 80 | 80 | 81 | 77 | 72 | 75 |
| 1250 | 75 | 76 | 79 | 80 | 82 | 81 | 83 | 81 | 80 | 82 | 82 | 79 | 80 | 80 | 82 | 77 | 72 | 73 |
| 1600 | 72 | 75 | 79 | 82 | 82 | 80 | 80 | 80 | 78 | 78 | 78 | 76 | 77 | 77 | 79 | 76 | 72 | 66 |
| 2000 | 72 | 76 | 80 | 82 | 82 | 78 | 78 | 77 | 76 | 75 | 78 | 76 | 76 | 76 | 78 | 75 | 72 | 63 |
| 2500 | 70 | 77 | 81 | 81 | 81 | 76 | 78 | 77 | 75 | 73 | 77 | 76 | 77 | 75 | 77 | 74 | 70 | 63 |
| 3150 | 69 | 76 | 79 | 79 | 78 | 75 | 76 | 75 | 74 | 71 | 73 | 73 | 74 | 73 | 76 | 73 | 69 | 62 |
| 4000 | 68 | 76 | 80 | 78 | 77 | 74 | 75 | 75 | 74 | 70 | 72 | 71 | 72 | 72 | 75 | 71 | 66 | 60 |
| 5000 | 65 | 73 | 77 | 74 | 73 | 69 | 70 | 70 | 70 | 65 | 68 | 67 | 67 | 68 | 72 | 68 | 63 | 57 |
| 6300 | 61 | 69 | 73 | 70 | 69 | 64 | 66 | 67 | 67 | 62 | 66 | 65 | 65 | 66 | 69 | 65 | 60 | 53 |
| 8000 | 55 | 64 | 67 | 65 | 65 | 58 | 60 | 60 | 60 | 55 | 59 | 58 | 59 | 61 | 62 | 58 | 54 | 46 |
| 10000 | 49 | 59 | 61 | 60 | 57 | 52 | 53 | 53 | 53 | 47 | 52 | 51 | 53 | 55 | 55 | 51 | 47 | 39 |
| OVERALL | 95 | 97 | 97 | 96 | 95 | 95 | 95 | 95 | 94 | 94 | 93 | 93 | 92 | 92 | 93 | 91 | 90 | 91 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE 1 MEASURED SOUND PRESSURE LEVEL (dB) | | | | | | | | | | | | | | | IDENTIFICATION: | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------------|-----|-----|-----|-----|
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | OMEGA 1.4 | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | TEST 78-833-001 | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | RUN 04 | | | | |
| (A-7 AIRCRAFT IN THE) | | | | | | | | | | | | | | | TEMP = 22 C | | | | |
| (AF32A-24 SUPPRESSOR) | | | | | | | | | | | | | | | BAR PRESS = .757 Hg | | | | |
| (ENGINE 1F41-A-1) | | | | | | | | | | | | | | | REL HUMID = 35 % | | | | |
| (FAR-FIELD NOISE) | | | | | | | | | | | | | | | PAGE 2 | | | | |
| FREQ | | | | | | | | | | | | | | | ANGLE (DEGREES) | | | | |
| (Hz) | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 25 | 83 | 84 | 82 | 82 | 85 | 85 | 86 | 85 | 87 | 85 | 85 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 78 |
| 31.5 | 83 | 83 | 83 | 82 | 85 | 83 | 84 | 84 | 84 | 81 | 80 | 81 | 82 | 80 | 80 | 81 | 81 | 81 | 81 |
| 40 | 81 | 81 | 83 | 81 | 83 | 83 | 83 | 83 | 82 | 82 | 82 | 84 | 84 | 84 | 84 | 83 | 80 | 80 | 80 |
| 50 | 76 | 77 | 79 | 78 | 78 | 80 | 73 | 73 | 73 | 83 | 79 | 80 | 74 | 80 | 80 | 75 | 74 | 74 | 74 |
| 63 | 84 | 84 | 80 | 79 | 73 | 81 | 73 | 77 | 73 | 80 | 78 | 78 | 73 | 78 | 78 | 78 | 77 | 77 | 77 |
| 80 | 83 | 83 | 81 | 80 | 80 | 81 | 77 | 76 | 76 | 79 | 79 | 78 | 80 | 78 | 78 | 78 | 77 | 77 | 77 |
| 100 | 79 | 79 | 76 | 79 | 76 | 77 | 77 | 77 | 80 | 81 | 81 | 80 | 80 | 79 | 79 | 74 | 73 | 73 | 73 |
| 125 | 86 | 86 | 87 | 87 | 83 | 78 | 76 | 78 | 79 | 83 | 82 | 82 | 81 | 77 | 77 | 76 | 78 | 78 | 78 |
| 160 | 86 | 86 | 85 | 86 | 86 | 82 | 81 | 74 | 79 | 84 | 83 | 83 | 73 | 76 | 76 | 79 | 81 | 81 | 81 |
| 200 | 88 | 85 | 87 | 84 | 83 | 84 | 84 | 81 | 81 | 85 | 84 | 84 | 73 | 81 | 81 | 81 | 81 | 81 | 81 |
| 250 | 87 | 85 | 85 | 83 | 82 | 86 | 85 | 83 | 81 | 94 | 80 | 79 | 73 | 79 | 79 | 81 | 82 | 82 | 82 |
| 315 | 86 | 82 | 81 | 79 | 80 | 79 | 79 | 78 | 77 | 84 | 84 | 81 | 77 | 77 | 77 | 78 | 79 | 79 | 79 |
| 400 | 88 | 82 | 82 | 79 | 80 | 81 | 80 | 81 | 78 | 85 | 85 | 79 | 77 | 76 | 76 | 79 | 78 | 78 | 78 |
| 500 | 86 | 80 | 81 | 80 | 79 | 80 | 79 | 82 | 77 | 84 | 84 | 77 | 73 | 77 | 77 | 80 | 79 | 79 | 79 |
| 630 | 85 | 80 | 79 | 80 | 79 | 79 | 79 | 81 | 76 | 82 | 81 | 77 | 79 | 76 | 76 | 77 | 75 | 75 | 75 |
| 800 | 83 | 81 | 80 | 81 | 79 | 80 | 80 | 80 | 77 | 81 | 80 | 77 | 78 | 76 | 76 | 77 | 76 | 76 | 76 |
| 1000 | 82 | 81 | 80 | 80 | 78 | 80 | 80 | 79 | 78 | 80 | 79 | 77 | 77 | 76 | 76 | 76 | 76 | 76 | 76 |
| 1250 | 81 | 80 | 79 | 78 | 77 | 79 | 79 | 79 | 78 | 79 | 78 | 77 | 76 | 75 | 75 | 74 | 75 | 75 | 75 |
| 1600 | 79 | 79 | 79 | 77 | 77 | 78 | 78 | 78 | 78 | 79 | 77 | 76 | 74 | 75 | 75 | 73 | 73 | 73 | 73 |
| 2000 | 76 | 77 | 77 | 74 | 74 | 76 | 75 | 76 | 75 | 75 | 74 | 73 | 71 | 72 | 72 | 69 | 70 | 70 | 70 |
| 2500 | 74 | 74 | 75 | 72 | 72 | 73 | 73 | 74 | 72 | 73 | 72 | 70 | 63 | 69 | 69 | 67 | 67 | 67 | 67 |
| 3150 | 72 | 71 | 72 | 69 | 70 | 71 | 70 | 71 | 69 | 70 | 69 | 68 | 67 | 66 | 66 | 64 | 64 | 64 | 64 |
| 4000 | 69 | 69 | 70 | 69 | 69 | 69 | 68 | 69 | 67 | 68 | 68 | 66 | 65 | 64 | 64 | 63 | 63 | 63 | 63 |
| 5000 | 65 | 64 | 65 | 65 | 64 | 65 | 63 | 64 | 62 | 64 | 63 | 62 | 61 | 59 | 59 | 59 | 61 | 61 | 61 |
| 6300 | 62 | 61 | 62 | 61 | 61 | 61 | 58 | 61 | 59 | 61 | 60 | 59 | 58 | 56 | 56 | 55 | 56 | 56 | 56 |
| 8000 | 56 | 56 | 58 | 57 | 57 | 57 | 54 | 56 | 55 | 56 | 55 | 53 | 53 | 51 | 51 | 50 | 51 | 51 | 51 |
| 10000 | 46< | 46< | 48< | 47< | 40< | 40< | 44< | 45< | 45< | 47< | 46< | 42< | 43< | 40< | 40< | 41< | 44< | 44< | 44< |
| OVERALL | 97 | 95 | 95 | 94 | 94 | 94 | 94 | 94 | 93 | 95 | 95 | 93 | 92 | 91 | 91 | 91 | 91 | 91 | 91 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE 1. NORMALIZED FAN-FIELD NOISE LEVELS

4
DISTANCE = 100 METERS

CS: SOURCE/SUBJECT:

A-7D AIRCRAFT IN THE
AF32A-19 SUPPORTS

ENGINE TFGI-4-1

FAR FIELD NOISE

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1. METEOROLOGICAL

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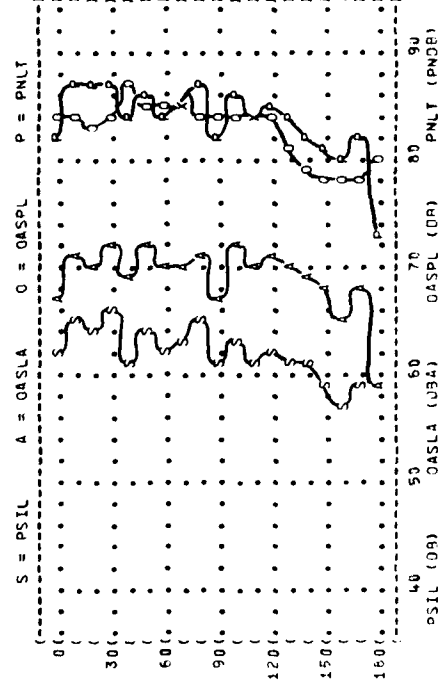
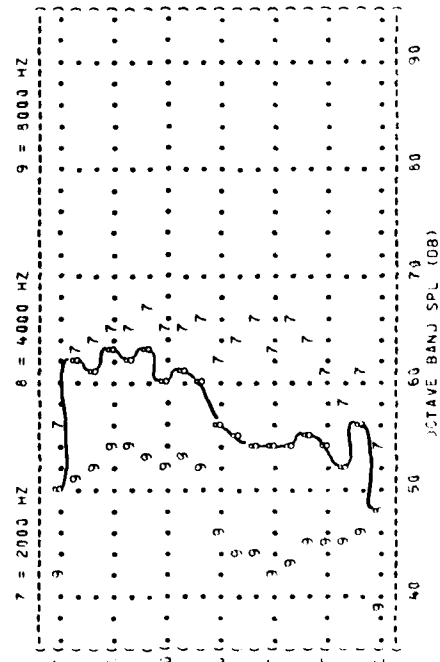
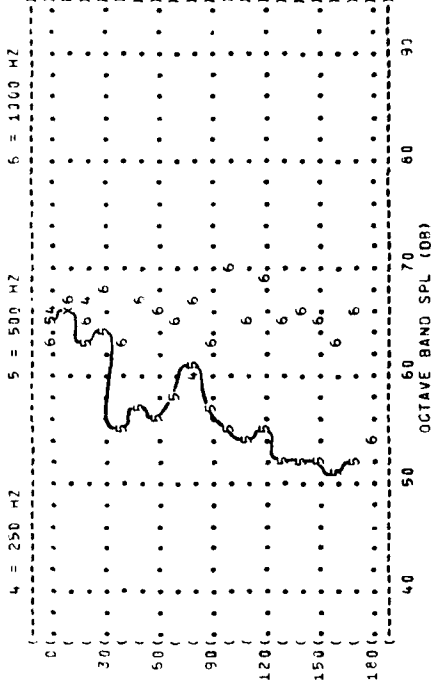
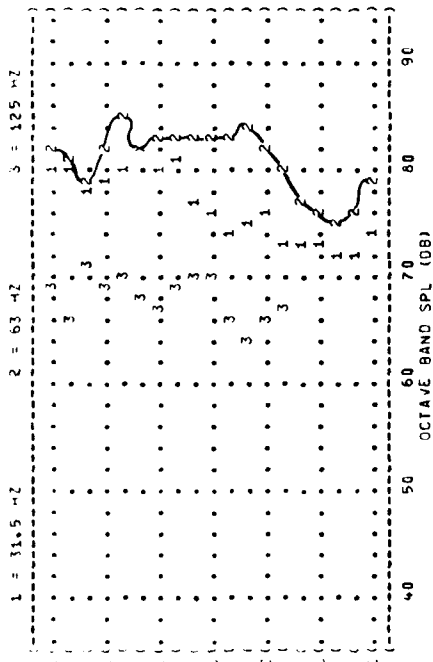
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--- PAGE 6 ---

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--- PAGE 6 ---



 SUBJECT: MEXICO

SEALANCE - 100 METERS

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 ENGINE 11-1-1
 1-321-24 000000

DECLASSIFIED
DATE 09-27-01
BY 60324

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RUN 01
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PAGE 6

IDENTIFICATION

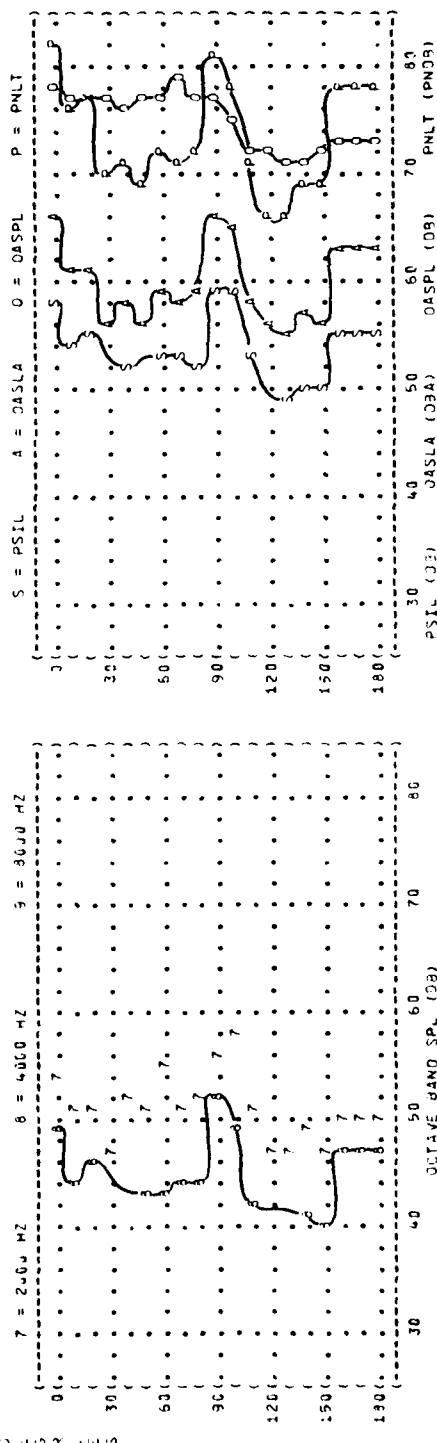
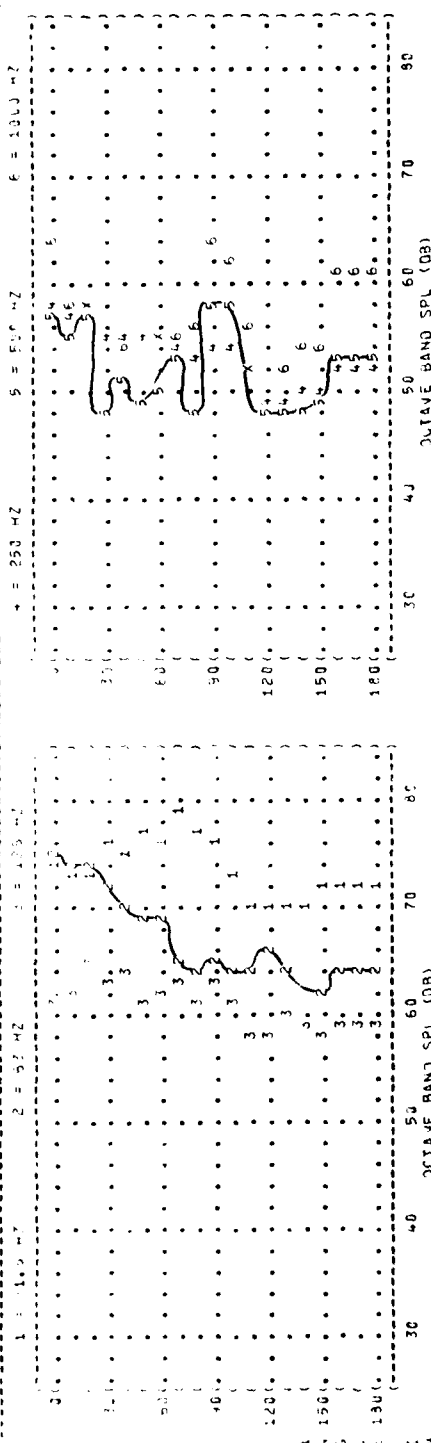


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

4 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT: 702 APM, ENGINE RUNUP
 170 AIRCRAFT IN THE
 REF2A-19 SUPPRESSOR
 ENGINE REF41-A1
 FAR FIELD NOISE

OPERATION: METEOROLOGY = 15 C
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

IDENTIFICATION: OMEGA 1.4
 TEST 77-833-001
 RUN 02
 20 NOV 79
 PAGE 6

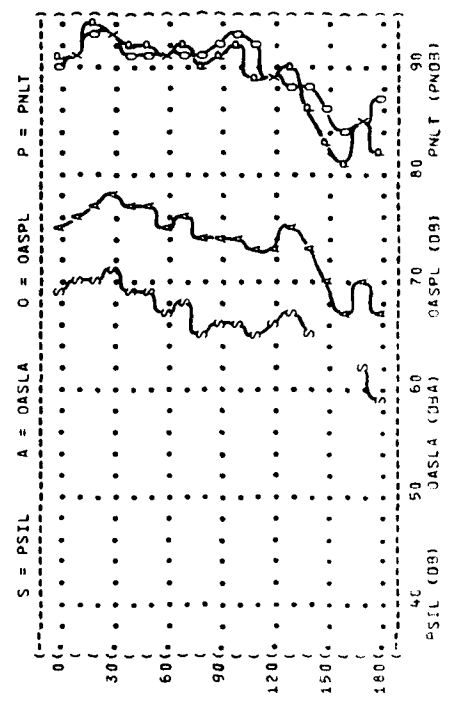
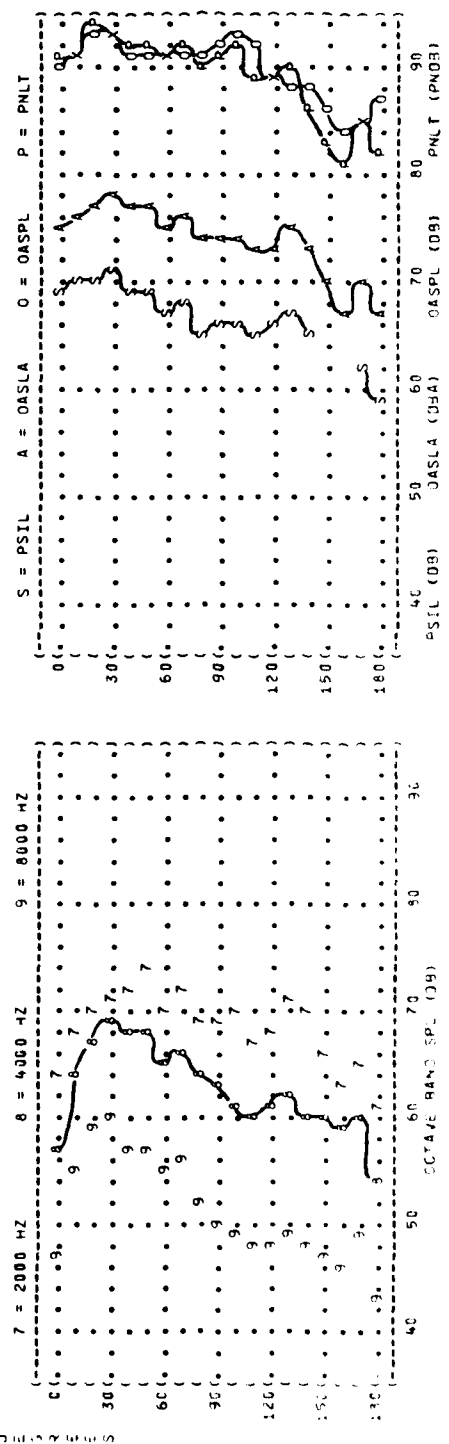
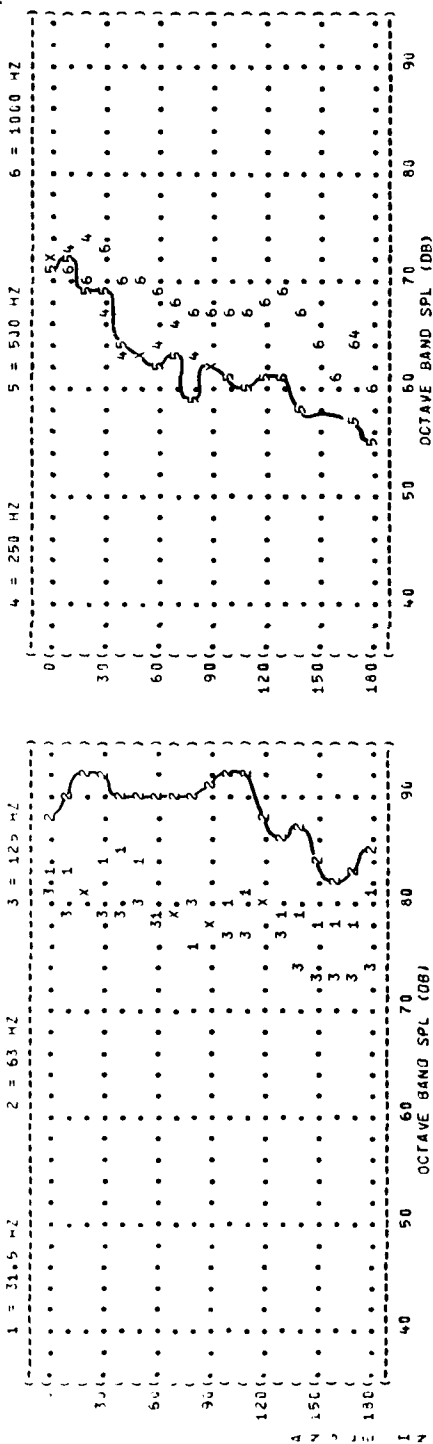
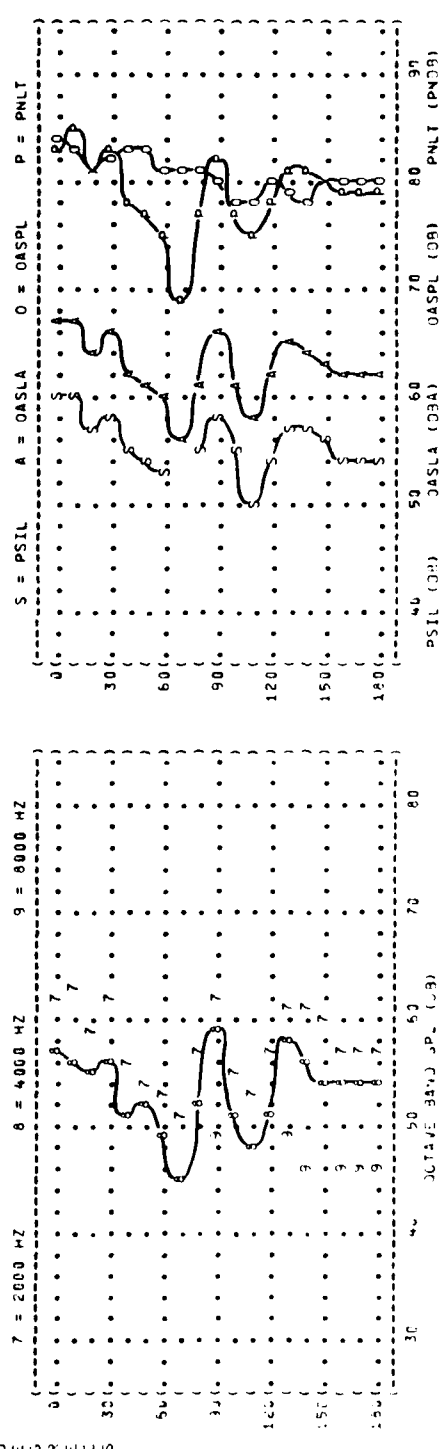
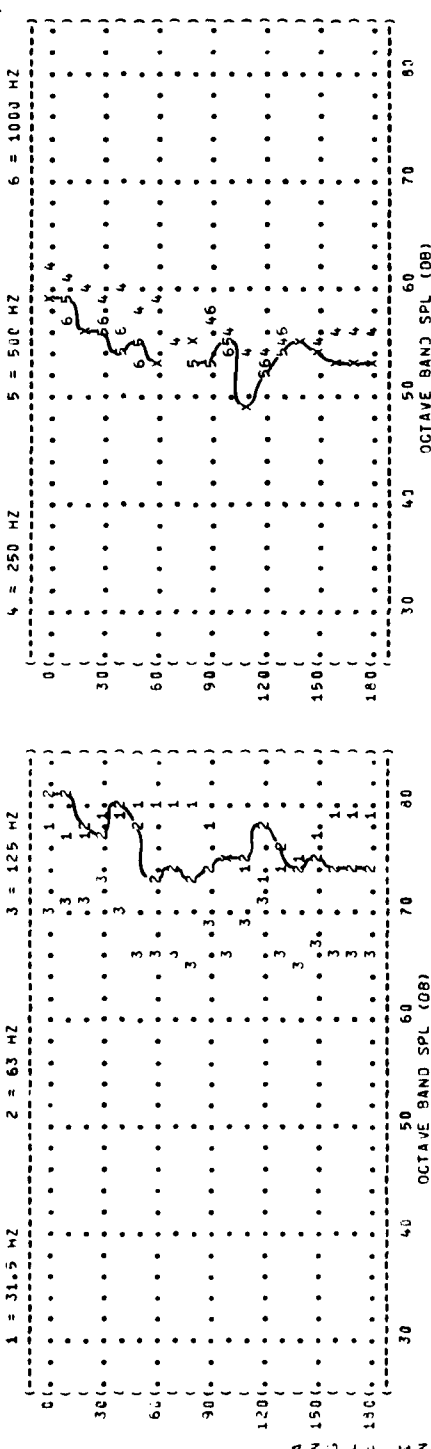


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

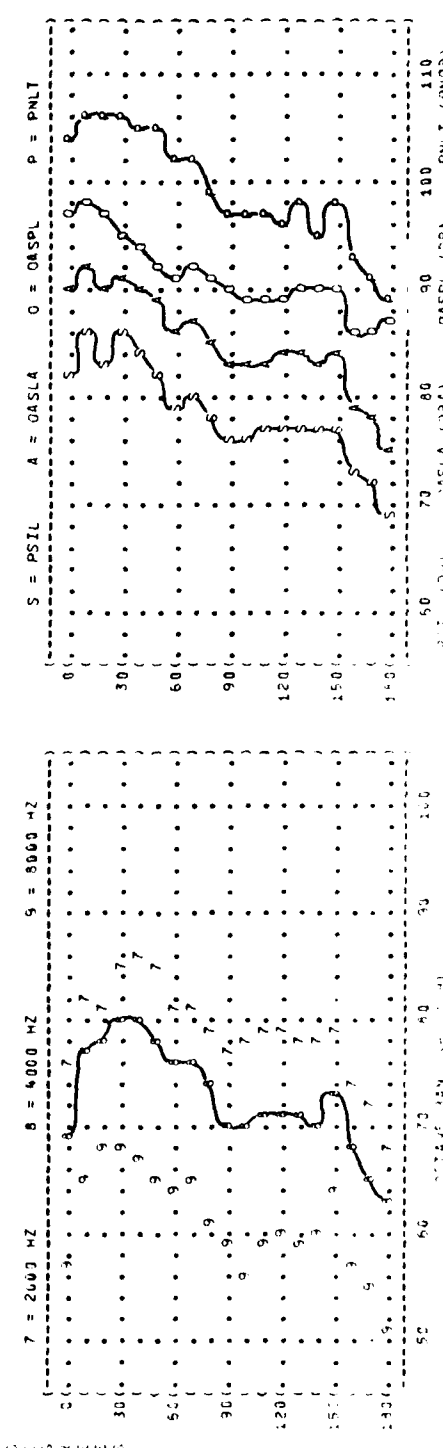
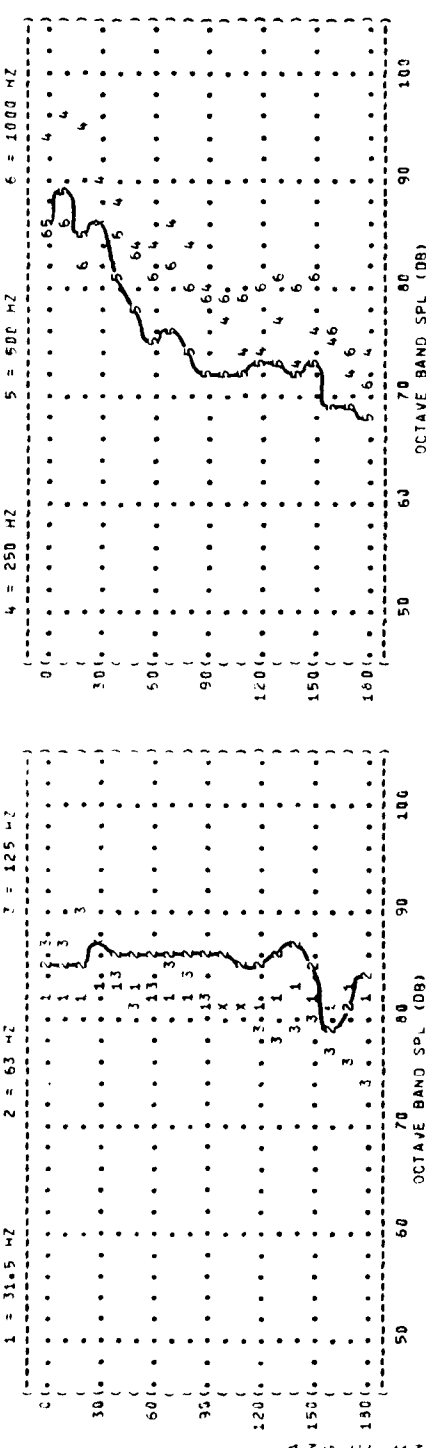
4 DISTANCE = 100 METERS

IDENTIFICATION: OMEGA 1-4
TEST 78-833-001
RUN 02
20 NOV 79
PAGE 6

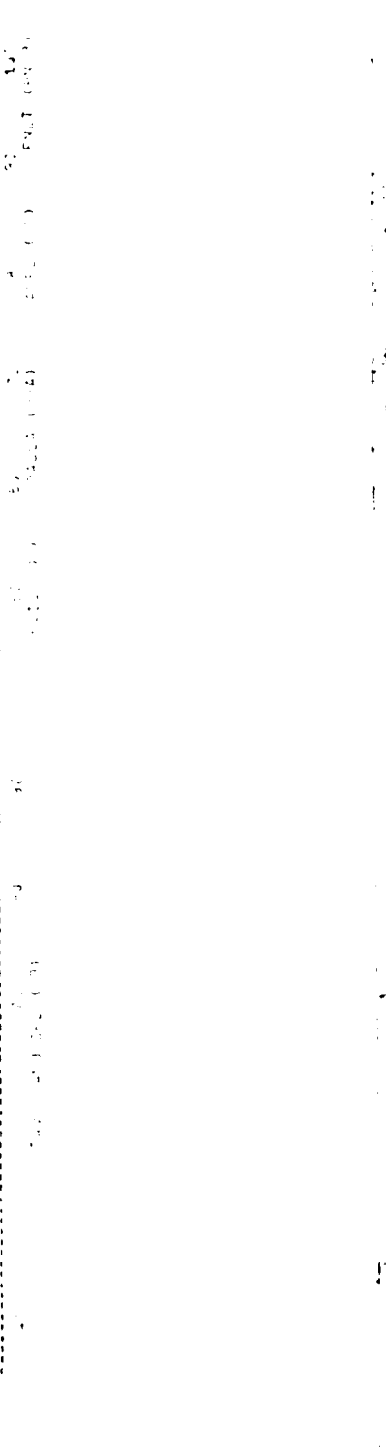
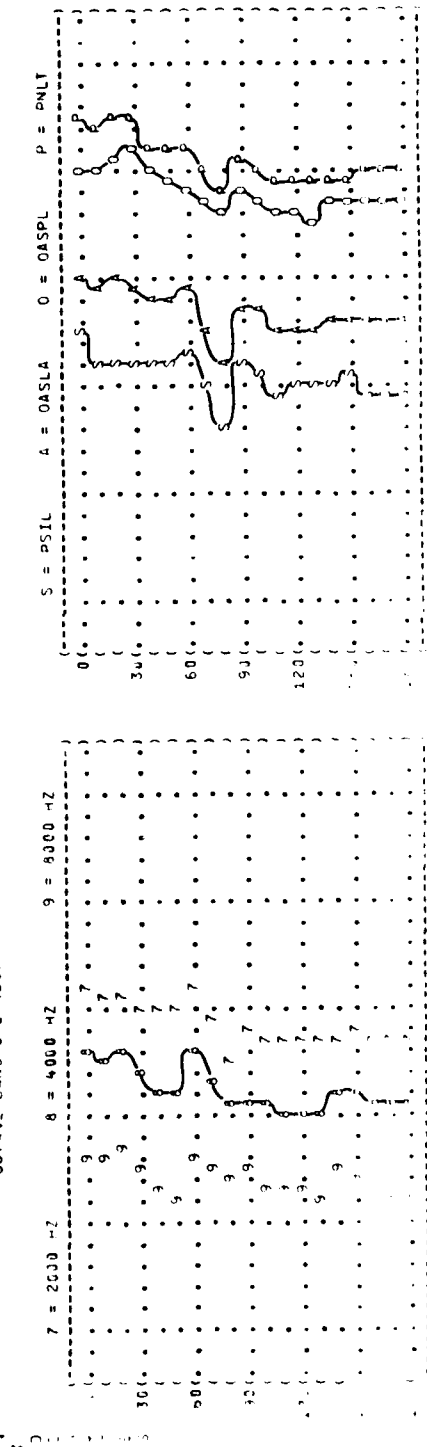
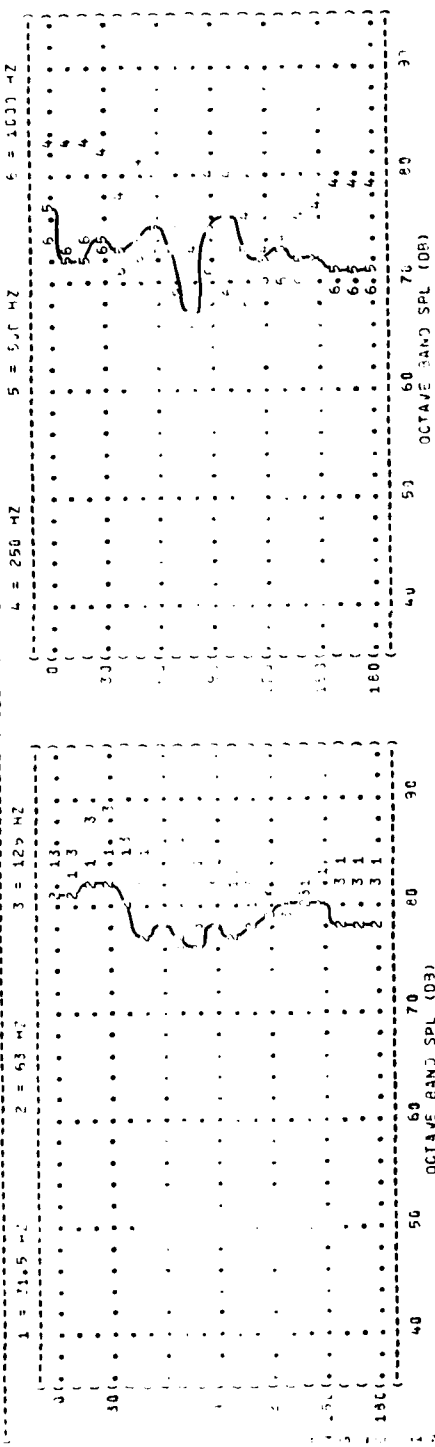
NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY: TEMP = 15 C
AF32A-24 SUPPRESSOR SINGLE ENGINE BAR PRESS = 2760 M HG
ENGINE TF41-A-1 GROUND RUNUP (SUPPRESSED) REL HUMID = 70 %
FAR-FIELD NOISE



1. SUBJECT: NORMALIZED FARFIELD NOISE LEVELS
 2. DISTANCE = 100 METERS
 3. NOISE SOURCE/SUBJECT:
 A-70 AIRCRAFT IN THE
 AF32A-19 SUPPRESSOR
 ENGINE 7F41-A-1
 FAR FIELD NOISE
 4. IDENTIFICATION:
 5. OMEGA 1.4
 TEST 77-833-001
 RUN 03
 6. METEOROLOGICAL:
 7. TEMP = 15 C
 8. BAR PRESS = 760 MM HG
 9. REL HUMID = 70 %
 10. DATE 20 NOV 79
 11. PAGE 6



4 DISTANCE = 170 METERS
 NOISE SOURCE/SUBJECT
 A-7 AIRCRAFT IN THE
 AF32A-26 SUPERIOR
 ENGINE TFAL-A-1
 FAR-FIELD NOISE
 IDENTIFICATION
 OMEGA 1.4
 TEST 78-833-711
 RUN 03
 METEOROLOGY
 TEMP = 15 C
 BAR PRESS = 1060 mm HG
 REL HUMID = 79 %
 DATE 6



IDENTIFICATION

1. 4000 Hz

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95. 4000 Hz

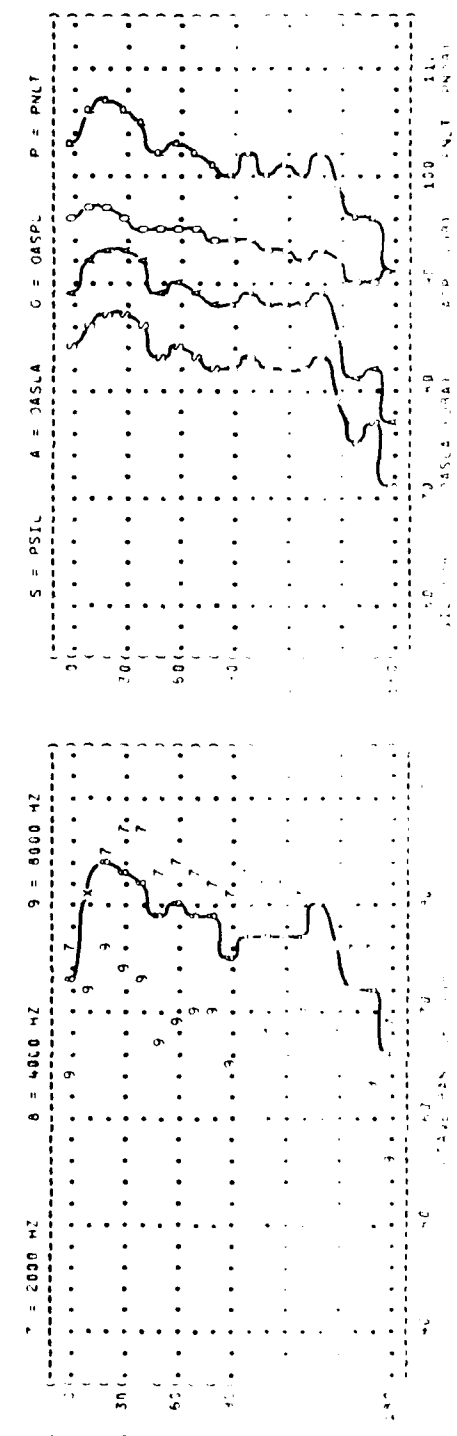
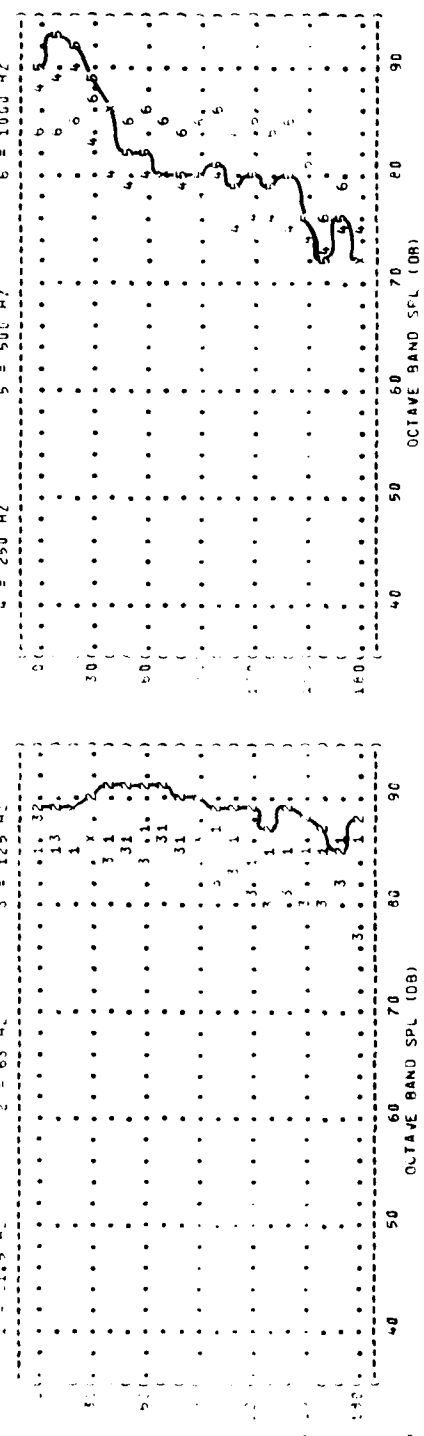
96. 4000 Hz

97. 4000 Hz

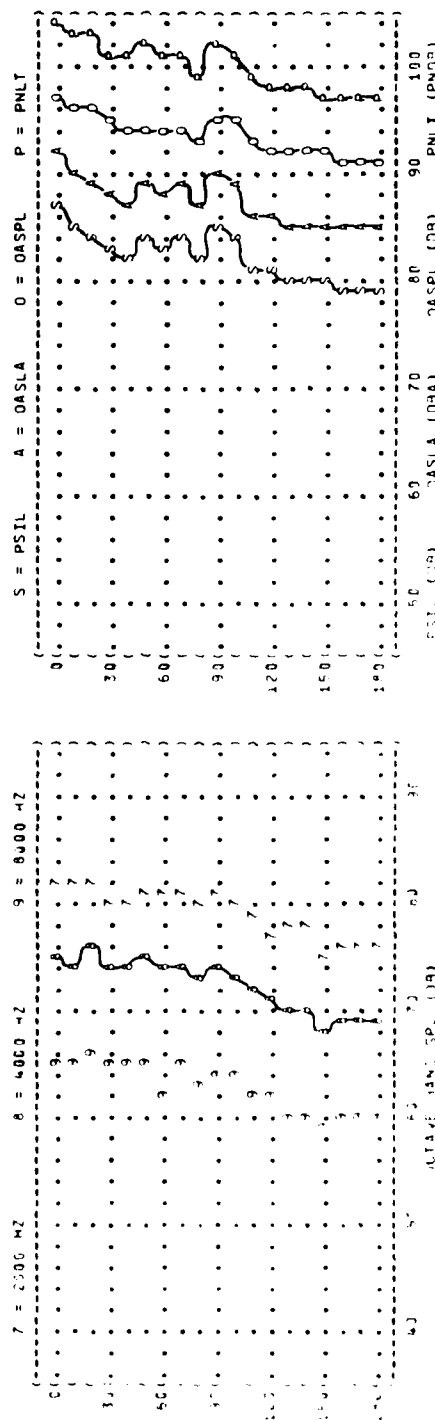
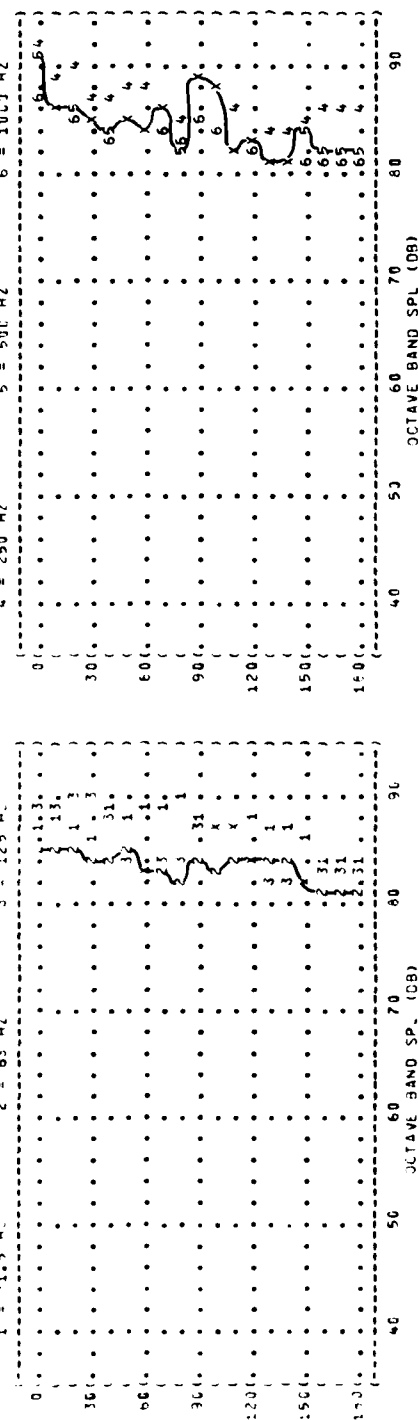
98. 4000 Hz

99. 4000 Hz

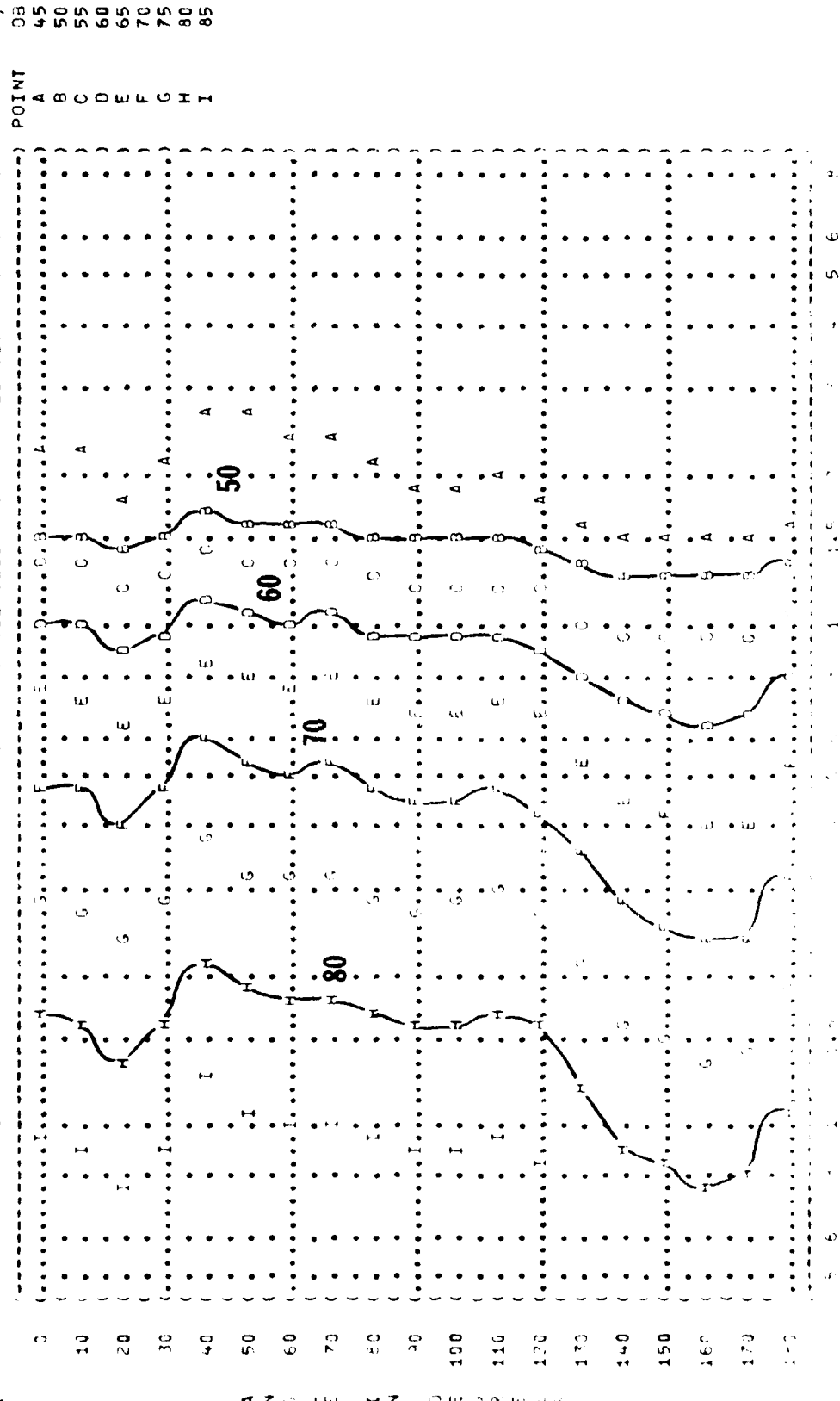
100. 4000 Hz



1 SUBJECT NORMALIZED FARFIELD NOISE LEVELS
 2
 3 DISTANCE = 100 METERS
 4
 5 NOISE SOURCE/SUBJECT
 6 1-7 AIRCRAFT IN THE
 7 REFLECTOR SUPPRESSOR
 8 ENGINE 14-1-1-2
 9 FARFIELD NOISE
 10
 11 IDENTIFICATION:
 12) OMEGA 1.4
 13) TEST 78-833-001
 14) RUN 04
 15) METEOROLOGICAL
 16) TEMPERATURE = 15 C
 17) REL HUMIDITY = 70 %
 18) 20 NOV 79
 19) PAGE 6

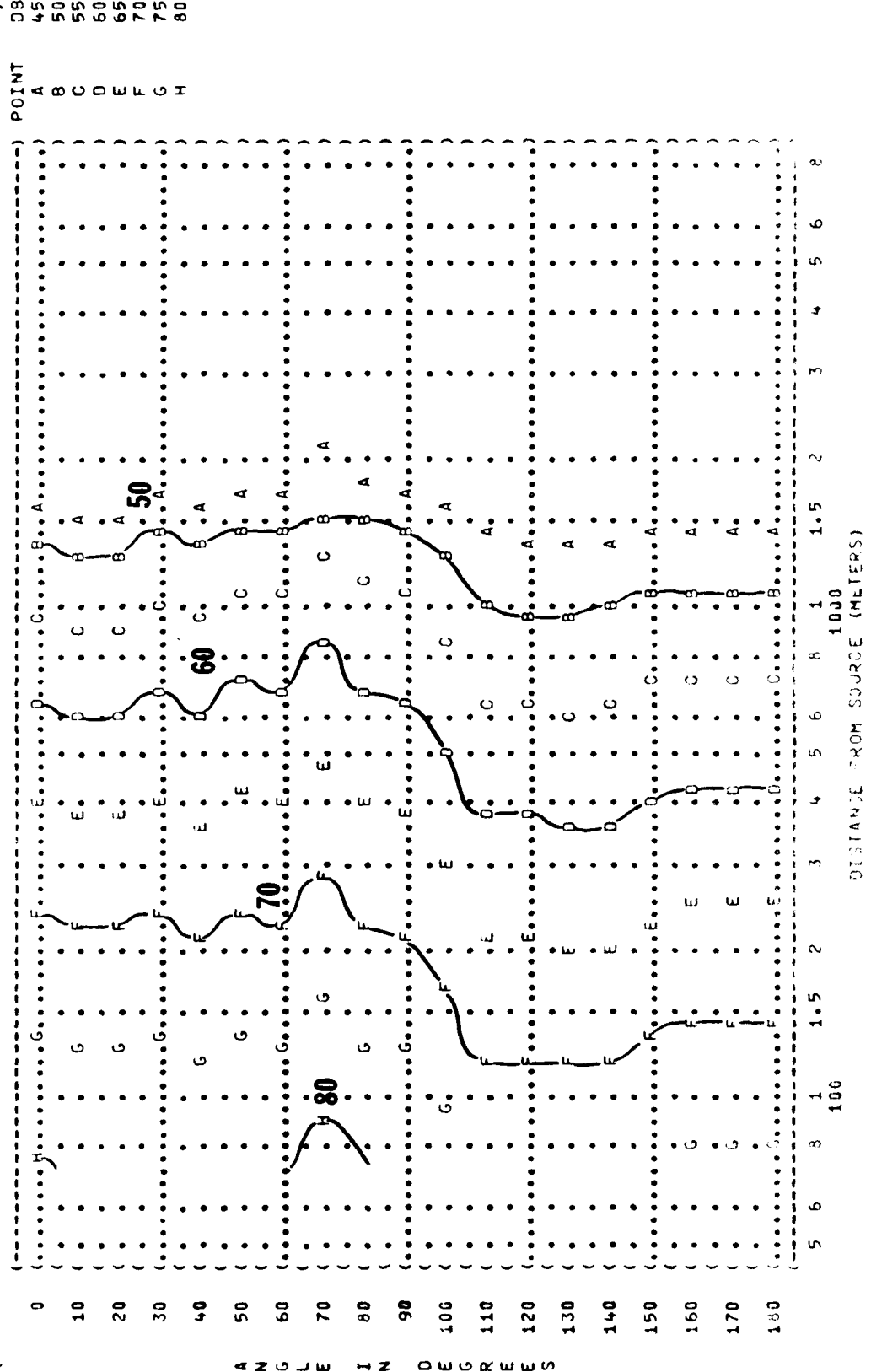


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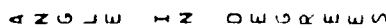
[illegible]

A Z C J W H Z O U S A R T Y

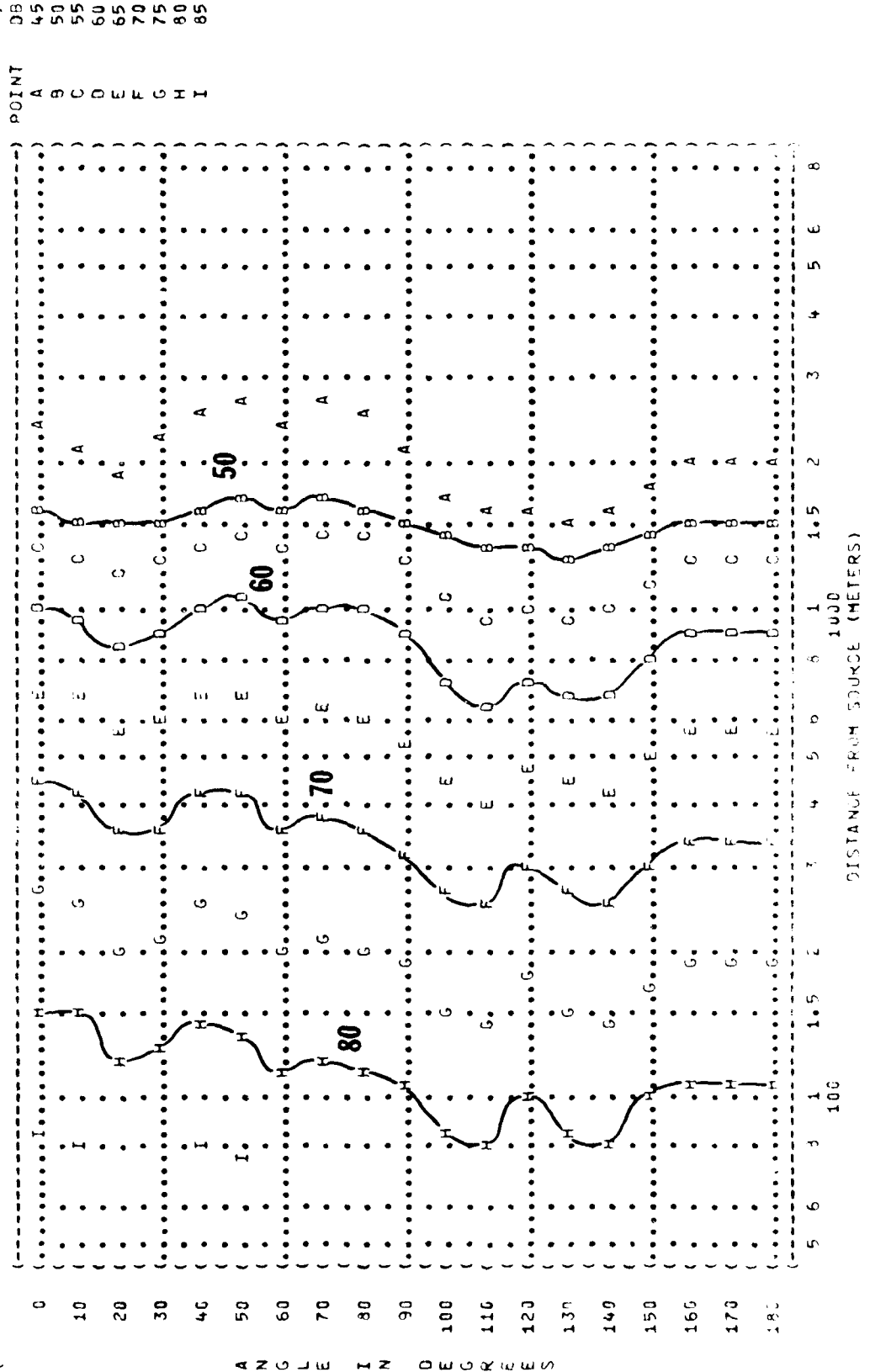
() IDENTIFICATION: ()
 () OMEGA 1.4
 () TEST 78-833-001
 () RUN 01
 () 20 NOV 79
 () PAGE 13
 ()
 () NOISE SOURCE/SUBJECT: () METEOROLOGY:
 () A-7 AIRCRAFT IN THE () TEMP = 15 C
 () AF32A-24 SUPPRESSOR () SINGLE ENGINE () BAR PRESS = .760 M HG
 () ENGINE TF41-A-1 () GROUND RUNUP (SUPPRESSED) () REL HUMID = 70 %
 () FAR-FIELD NOISE ()



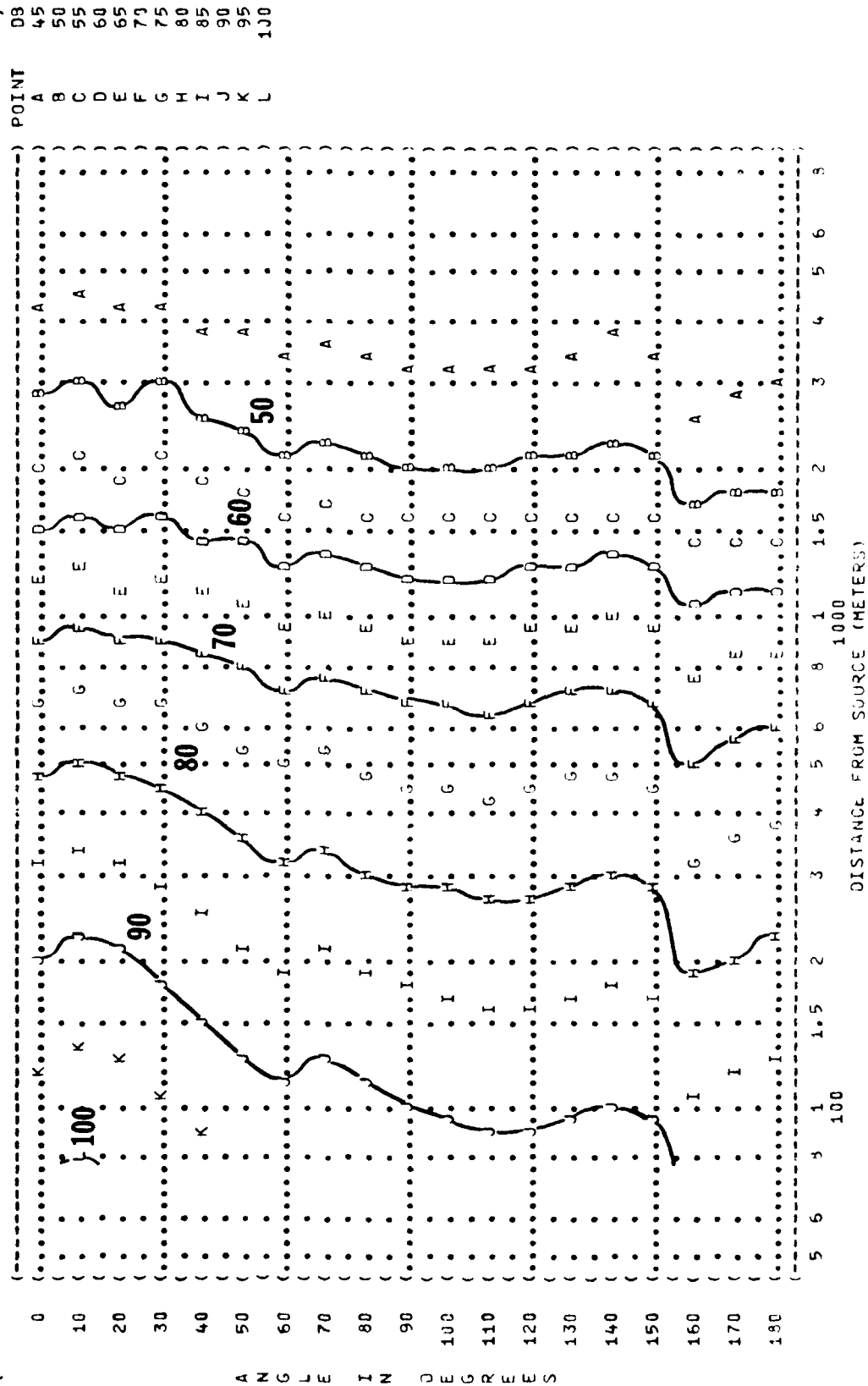
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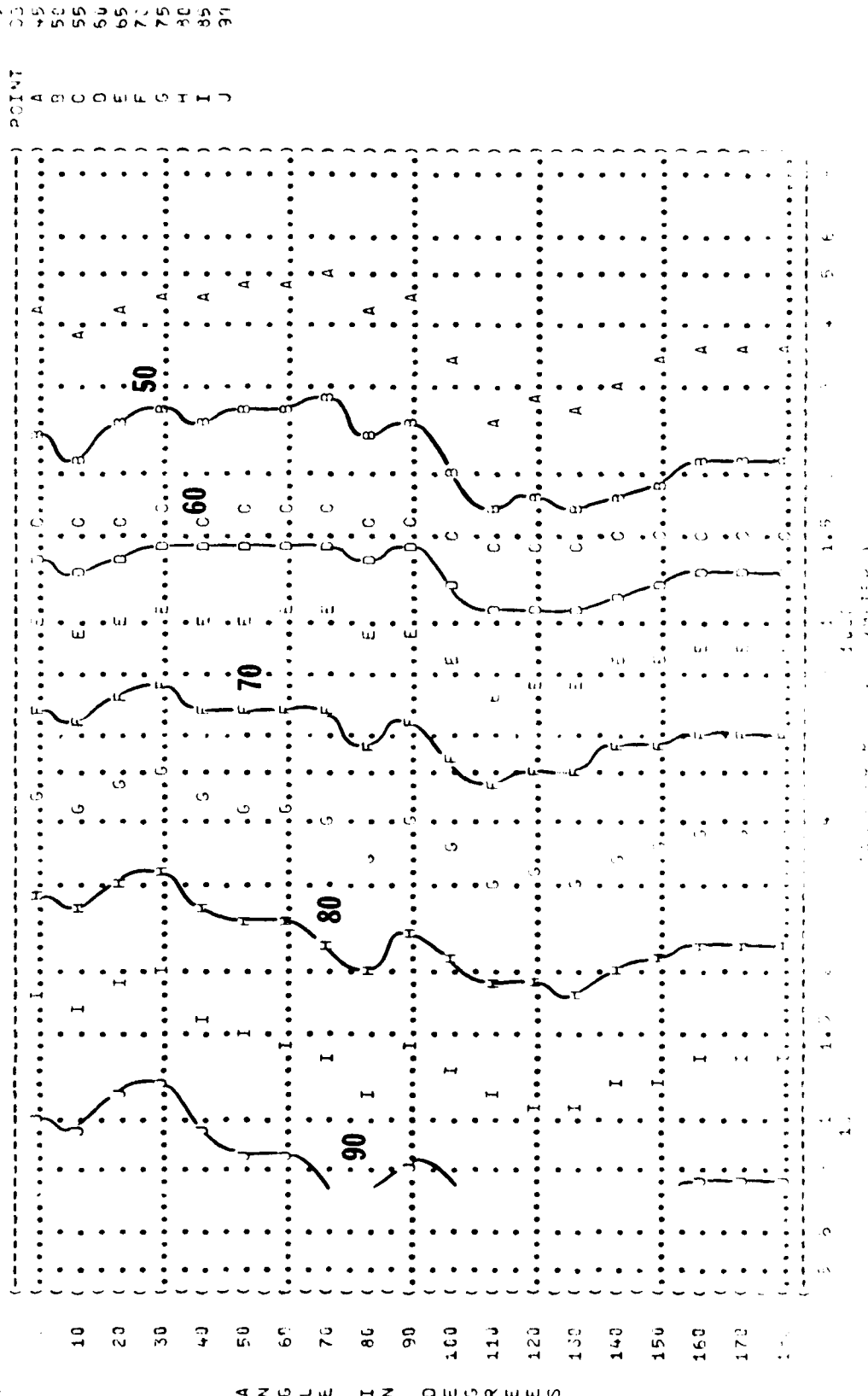
(FIGURE: OVERALL SOUND PRESSURE LEVEL (ASPL))
 (5 EQUAL LEVEL CONTOURS (L))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST 78-033-001)
 () RUN 02)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 H HG)
 () REL HUMID = 70 %)
 () 20 NOV 79)
 () PAGE 13)



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(-----)
( FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL} ) IDENTIFICATION# )
(      5 EQUAL LEVEL CONTOURS (DB) ) )
( ) ) OMEGA 1.4 )
( ) ) TEST 77-833-001 )
( ) ) RUN D3 )
( ) ) )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( A-70 AIRCRAFT IN THE ) TEMP = 15 C )
( AF32A-19 SUPPRESSOR ) BAR PRESS = .760 M H5 )
( ENGINE TF41-A-1 ) REL HUMID = 70 % )
( FAR FIELD NOISE ) )
(-----)
( PAGE 13 )
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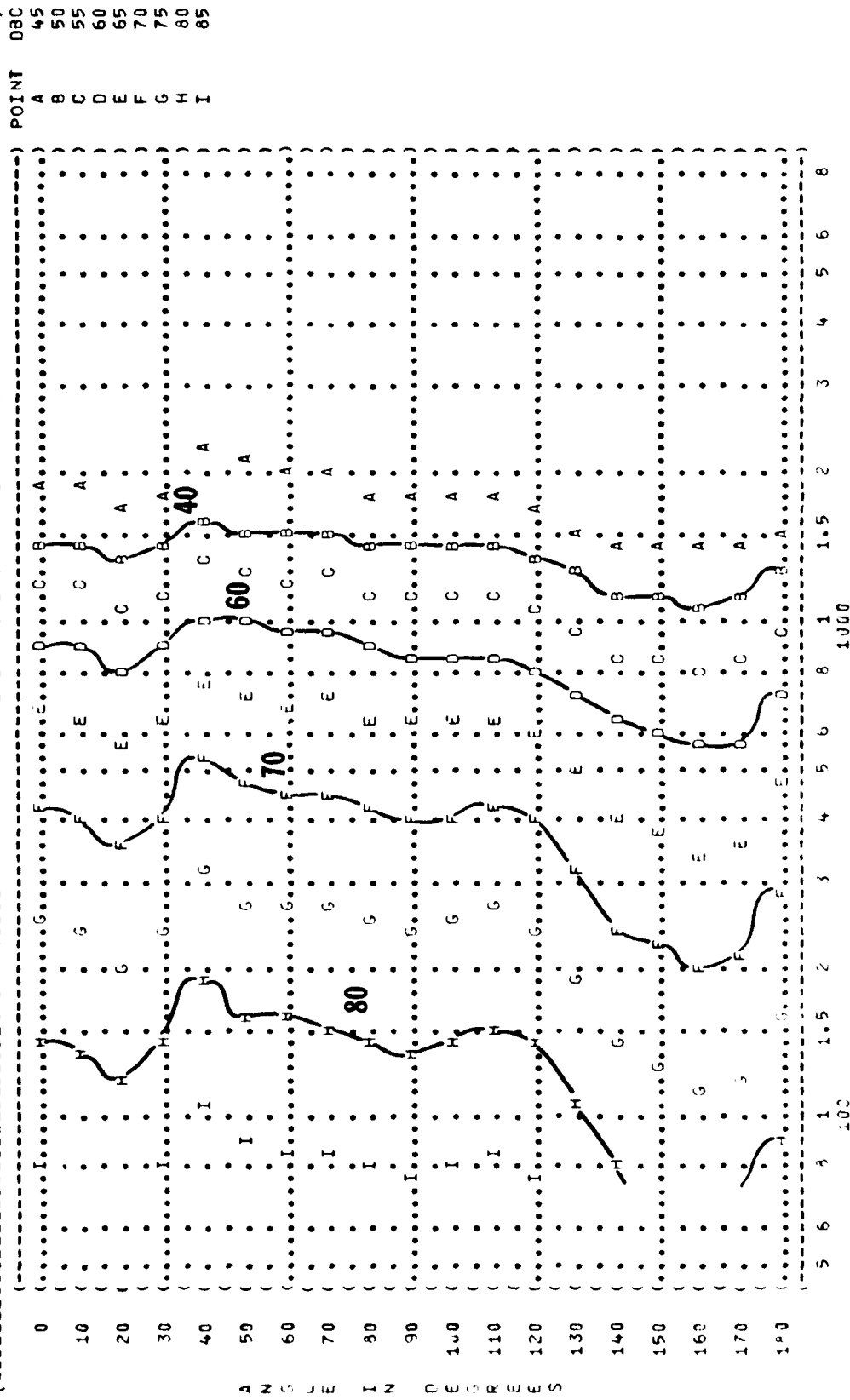


5
 IDENTIFICATION
 OMEGA 1.4
 TEST 77-833-104
 RUN 03
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = 76.1 mm HG
 REL HUMID = 77 %
 OPERATION:
 55.5% RPM
 SINGLE ENGINE
 GROUND RUNUP (SUPPRESSED)
 ENGINE TF41-A-1
 FAR-FIELD NOISE
 PAGE 13

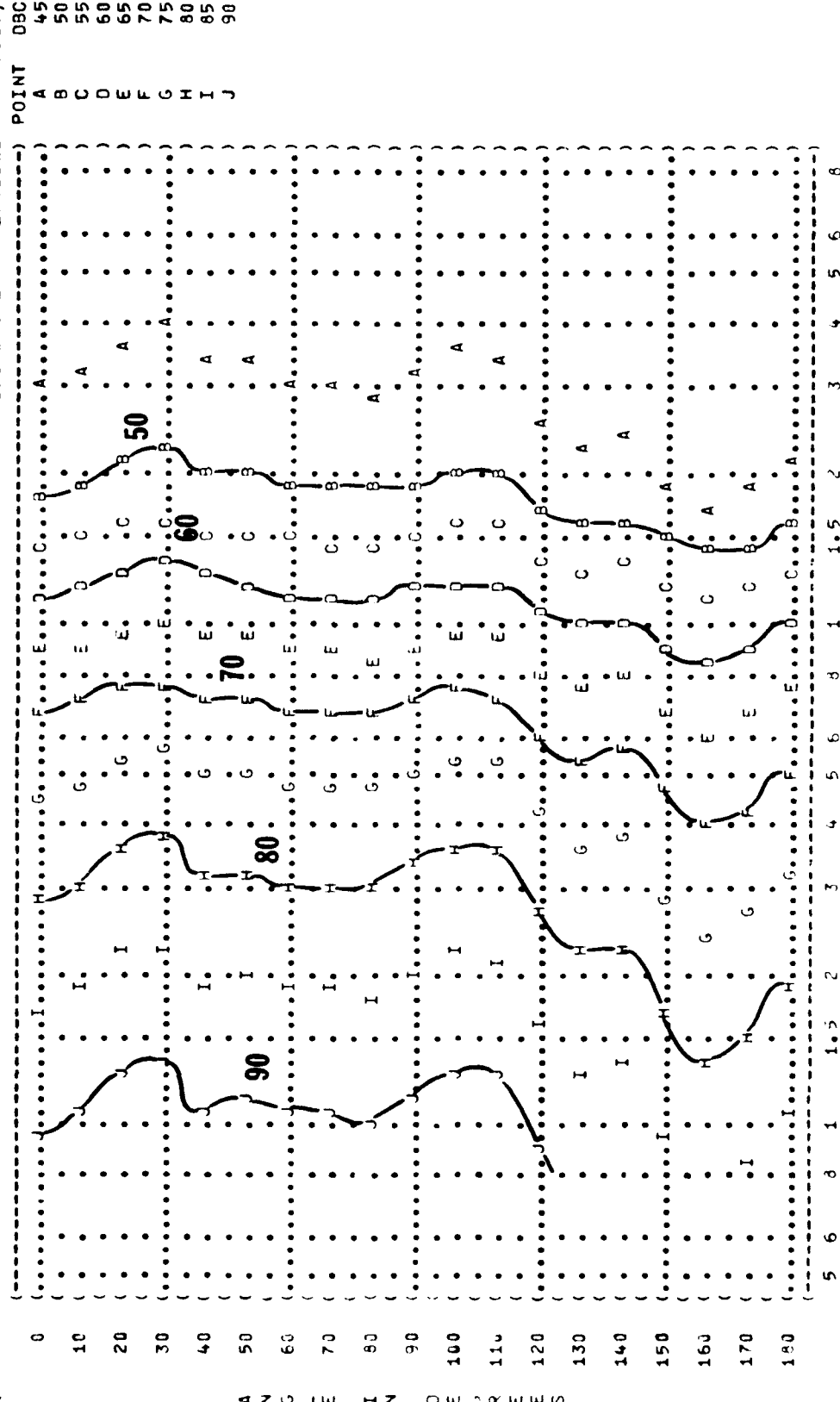


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(FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC))
 (6 EQUAL LEVEL CONTOURS (OBC))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST 77-833-001)
 () RUN 01)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () PAGE 14)
 () NOISE SOURCE/SUBJECT:)
 () OPERATION:)
 () IDLE PMR, 55% RPM)
 () SINGLE ENGINE)
 () SUPPRESSED GROUND RUNUP)
 () ENGINE TF41-A-1)
 () FAR FIELD NOISE)



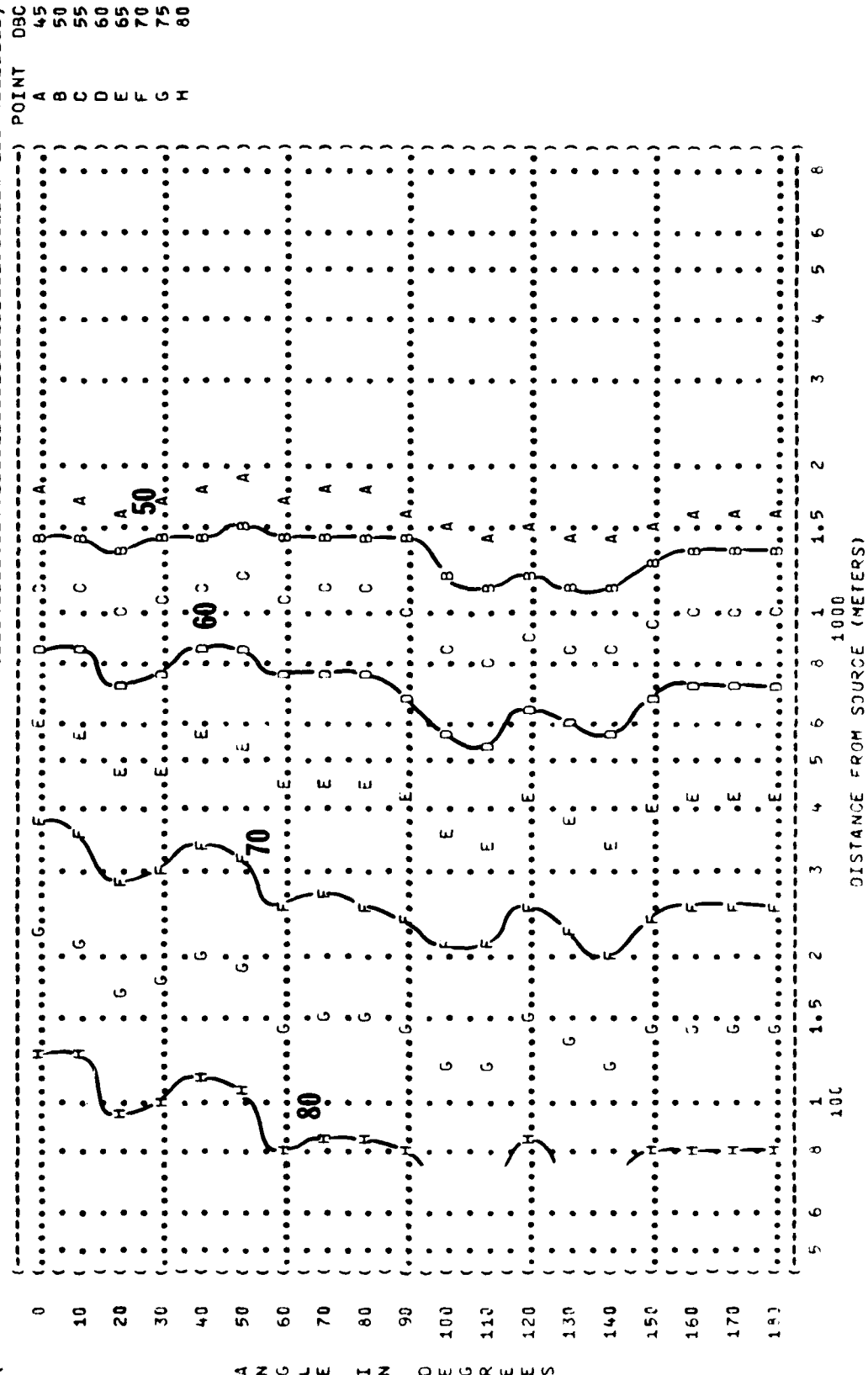
) IDENTIFICATION:)
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) OMEGA 1.4)
) TEST 77-833-001)
) RUN 02)
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) METEOROLOGY:)
) TEMP = 15 C)
) BAR PRESS = .760 H HG)
) REL HUMID = 70 %)
) 20 NOV 79)
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) PAGE 14)
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DISTANCE FROM SOURCE (METERS)
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ANGLE IN DEGREES

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| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |

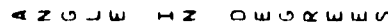


IDENTIFICATION:)
OMEGA 1.4)
TEST 77-833-001)

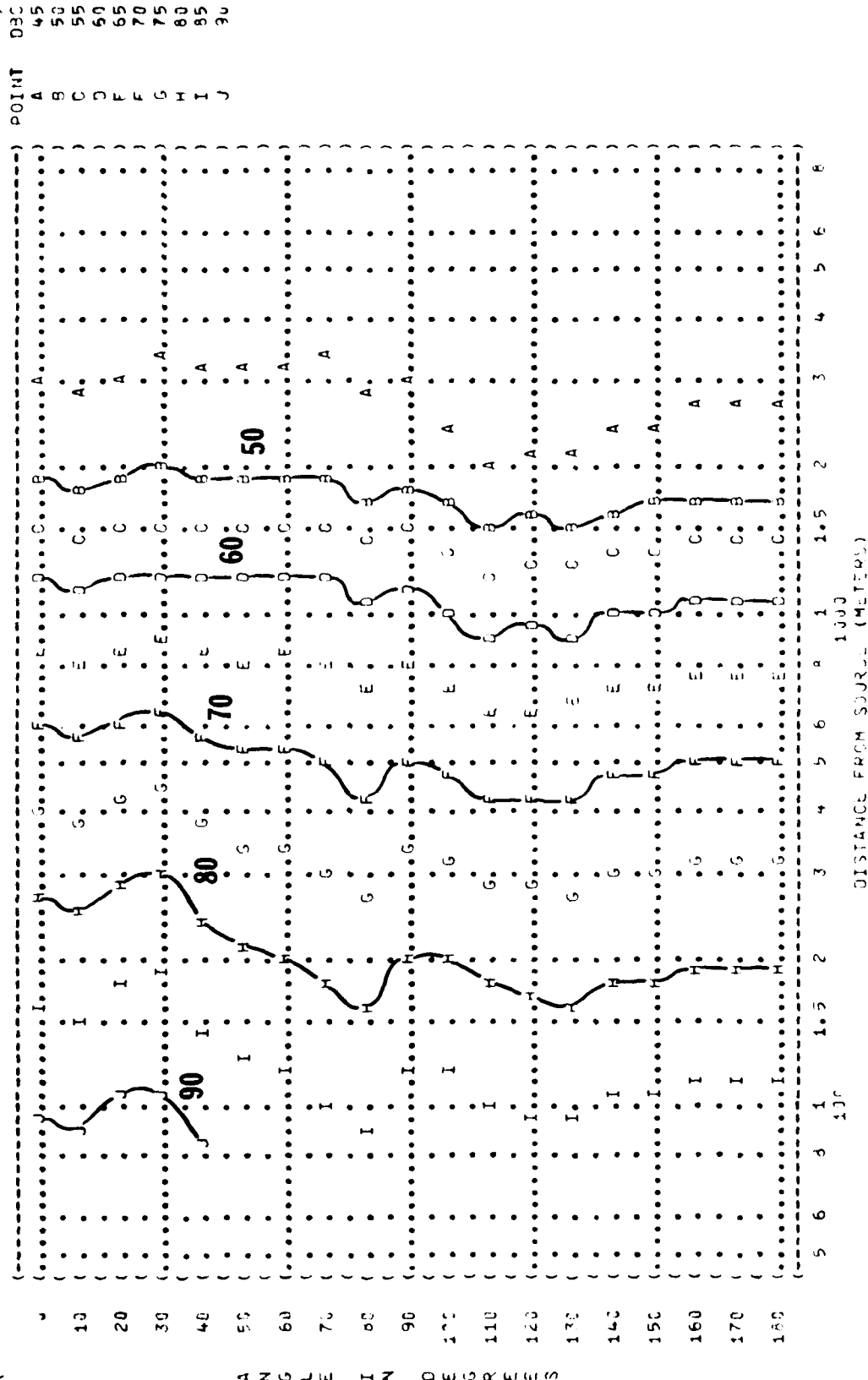
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METEOROLOGY:
TEMP
BAR PRESS
REL HUMID

00 RUN 03
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00 20 NOV 79
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00 PAGE 14



(FIGURE 1 C-WEIGHTED OVERALL SOUND LEVEL (OASLC))
 (6 EQUAL LEVEL CONTOURS (CNC))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 (TEST 7d-533-031)
 (RUN 02)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M H3)
 () REL HUMID = 70 %)
 () 20 NOV 79)
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BAR PRESS = .760 M H₂

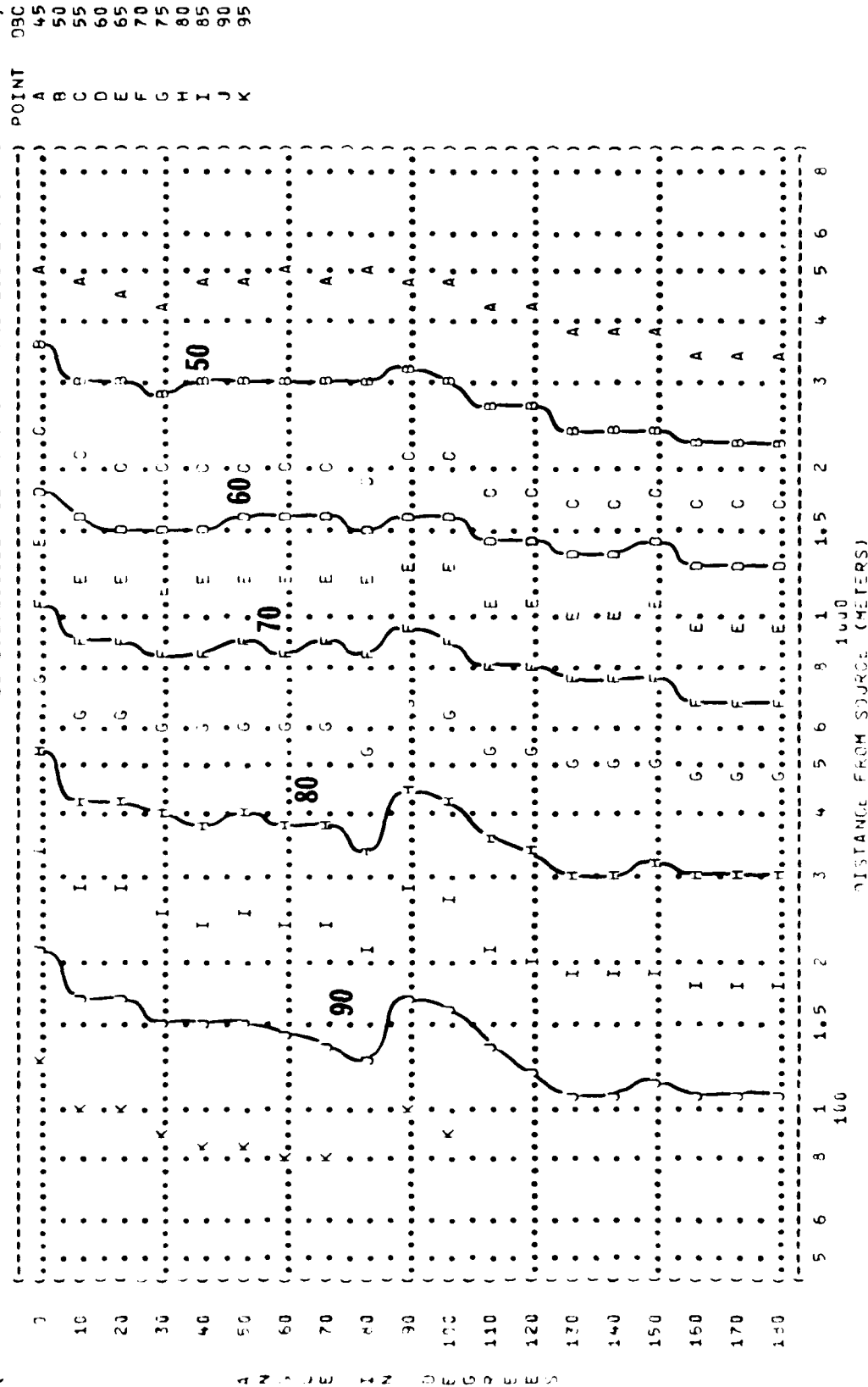
20 NOV 79

REL HUMID = 70 %

PAGE 14

47

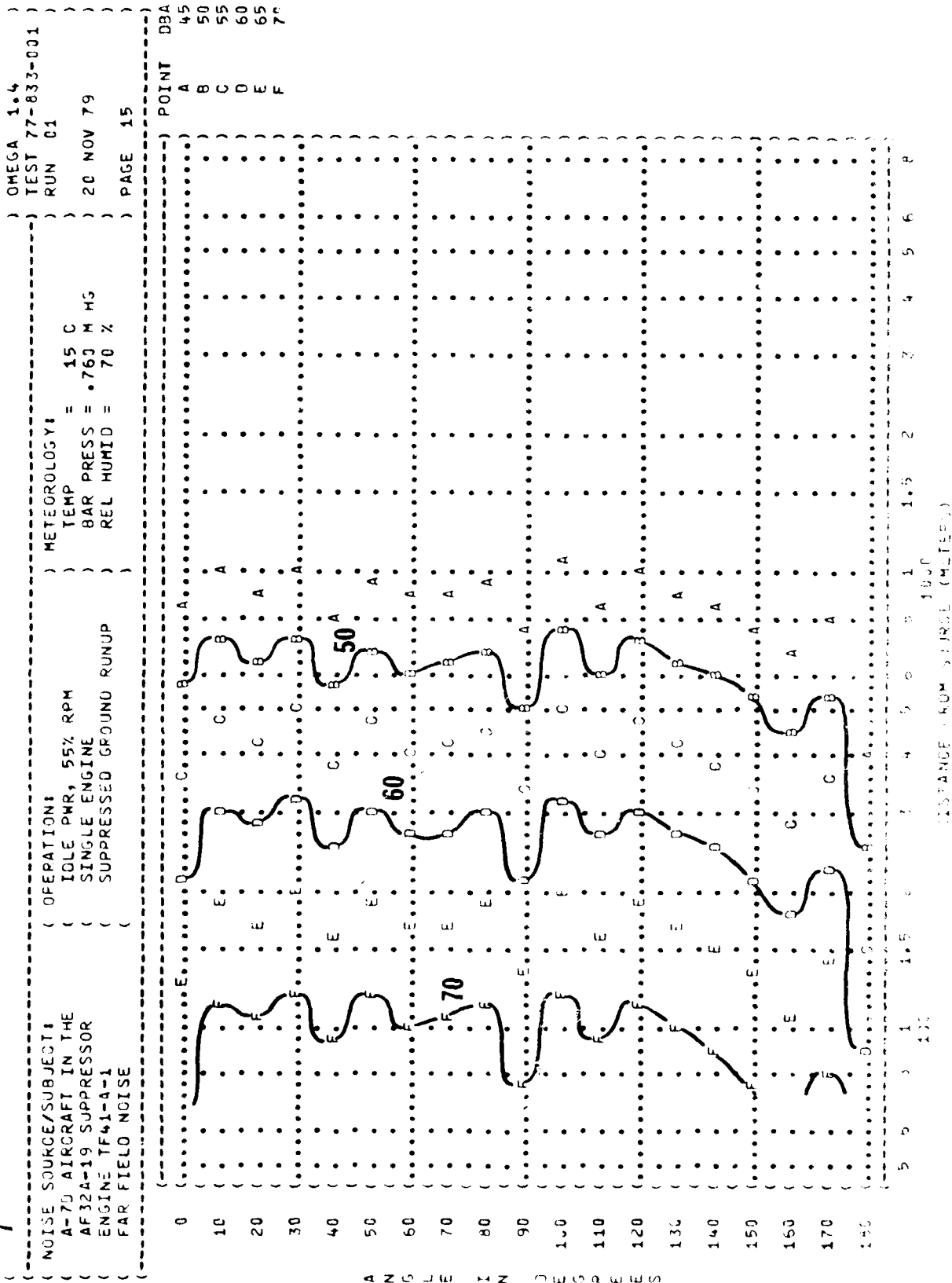
IDENTIFICATION:)
 OMEGA 1.4)
 TEST 78-973-001)
 RUN 04)
 METEOROLOGY:)
 TEMP = 15 C)
 BAR PRESS = .760 M HG)
 REL HUMID = 70 %)
 OPERATION:)
 MILITARY POWER (97.7%))
 SINGLE ENGINE)
 GROUND RUNUP (SUPPRESSED))
 FAR-FIELD NOISE)



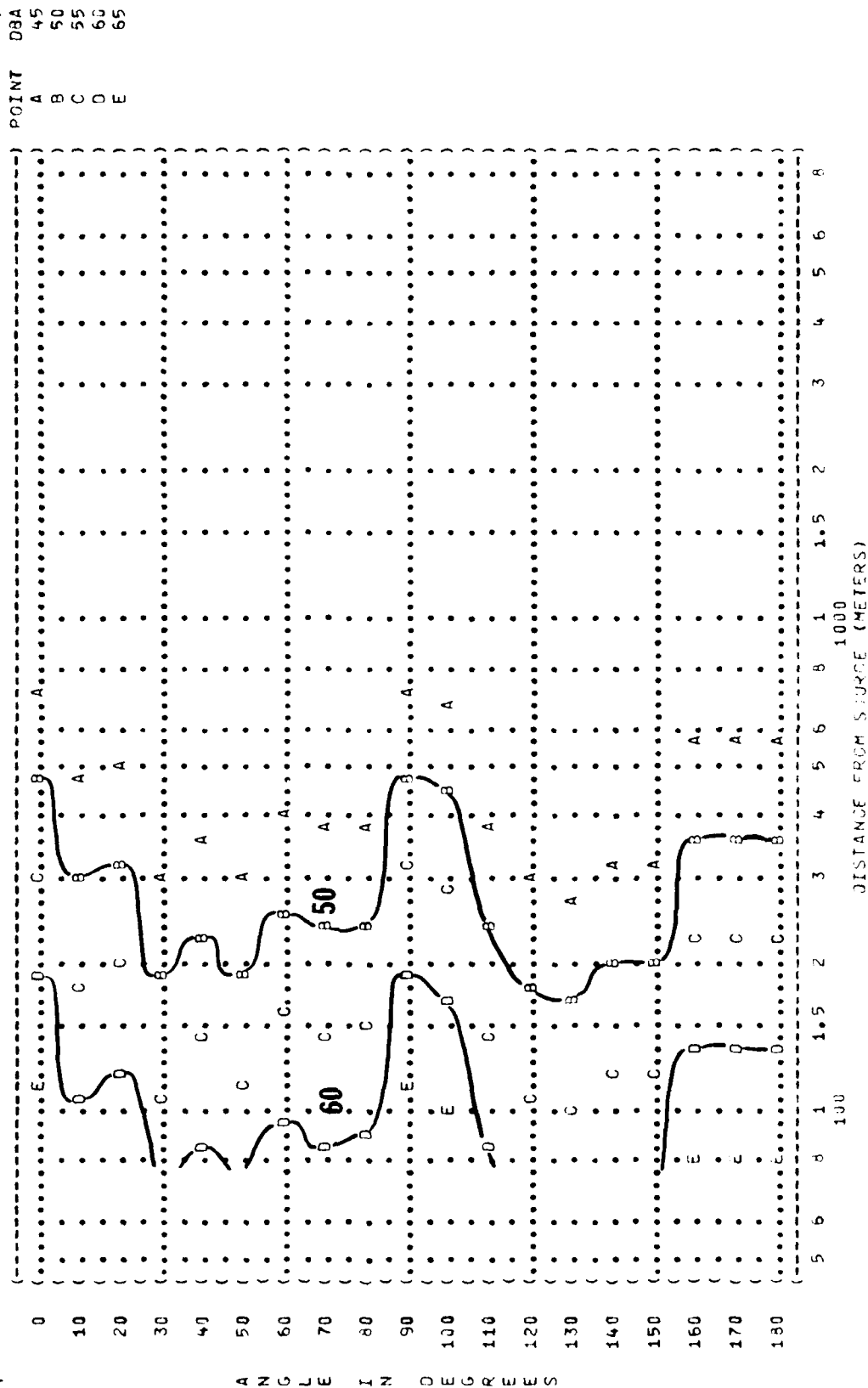
A N O I S E I N D E C I B S

DISTANCE FROM SOURCE (METERS)

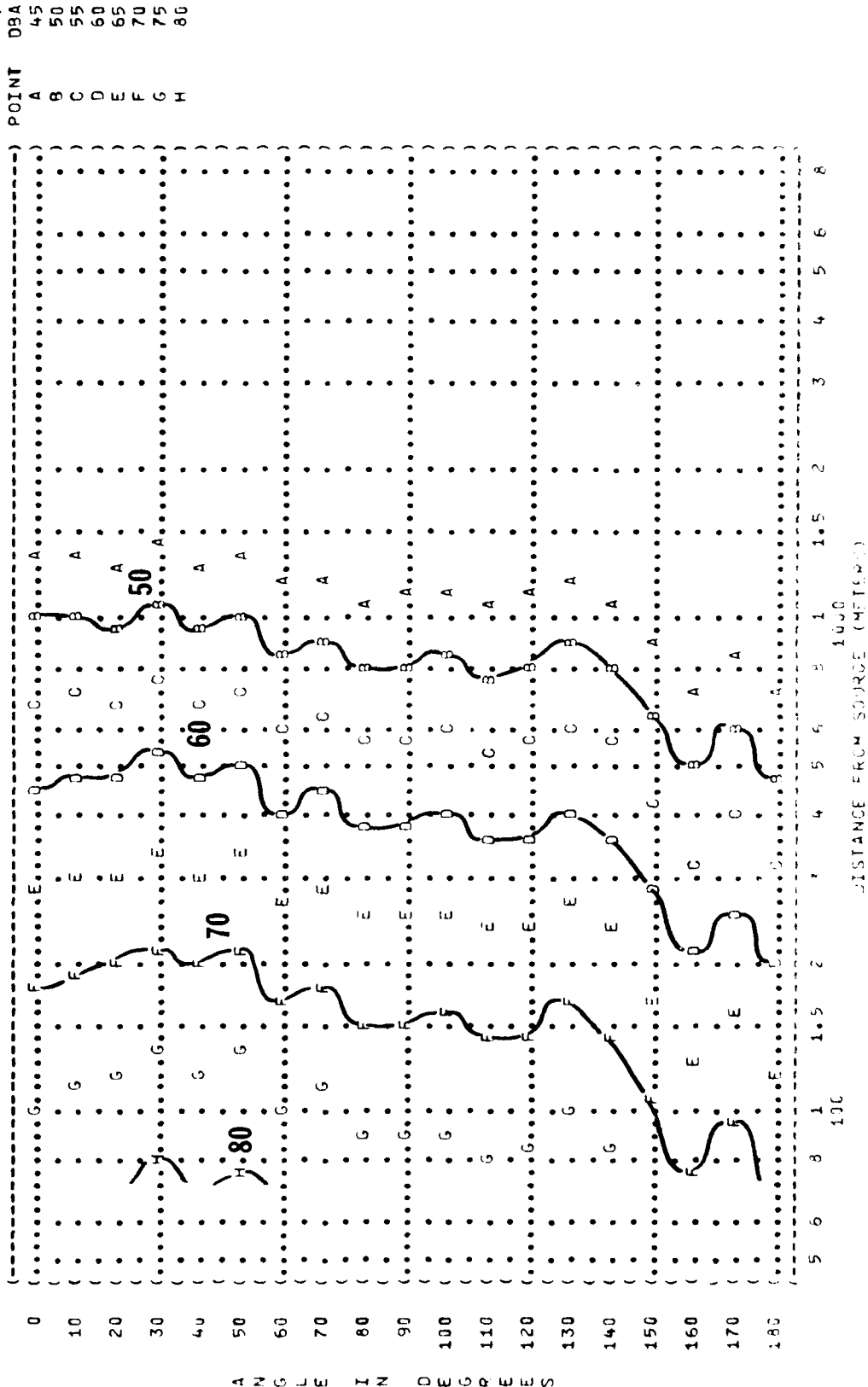
FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (DASLA)
EQUAL LEVEL CONTOURS (CBA)



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (EQUAL LEVEL CONTOURS (CBA)
 (7
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-001
 (RUN 01
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 (A-7 AIRCRAFT IN THE
 (IDLE POWER (54.4% RPM)
 (AF32A-24 SUPPRESSOR
 (SINGLE ENGINE
 (ENGINE TF41-A-1
 (GROUND RUNUP (SUPPRESSED)
 (FAR-FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (20 NOV 79
 (PAGE 15



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA))
 (7 EQUAL LEVEL CONTOURS (DBA))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST 77-833-001)
 () RUN 02)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () PAGE 15)
 ()
 (NOISE SOURCE/SUBJECT:)
 () OPERATION:)
 () A-7J AIRCRAFT IN THE)
 () AF32A-19 SUPPRESSOR)
 () ENGINE TF41-A-1)
 () FAR FIELD NOISE)



A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
EQUAL LEVEL CONTOURS (CBA)

5

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

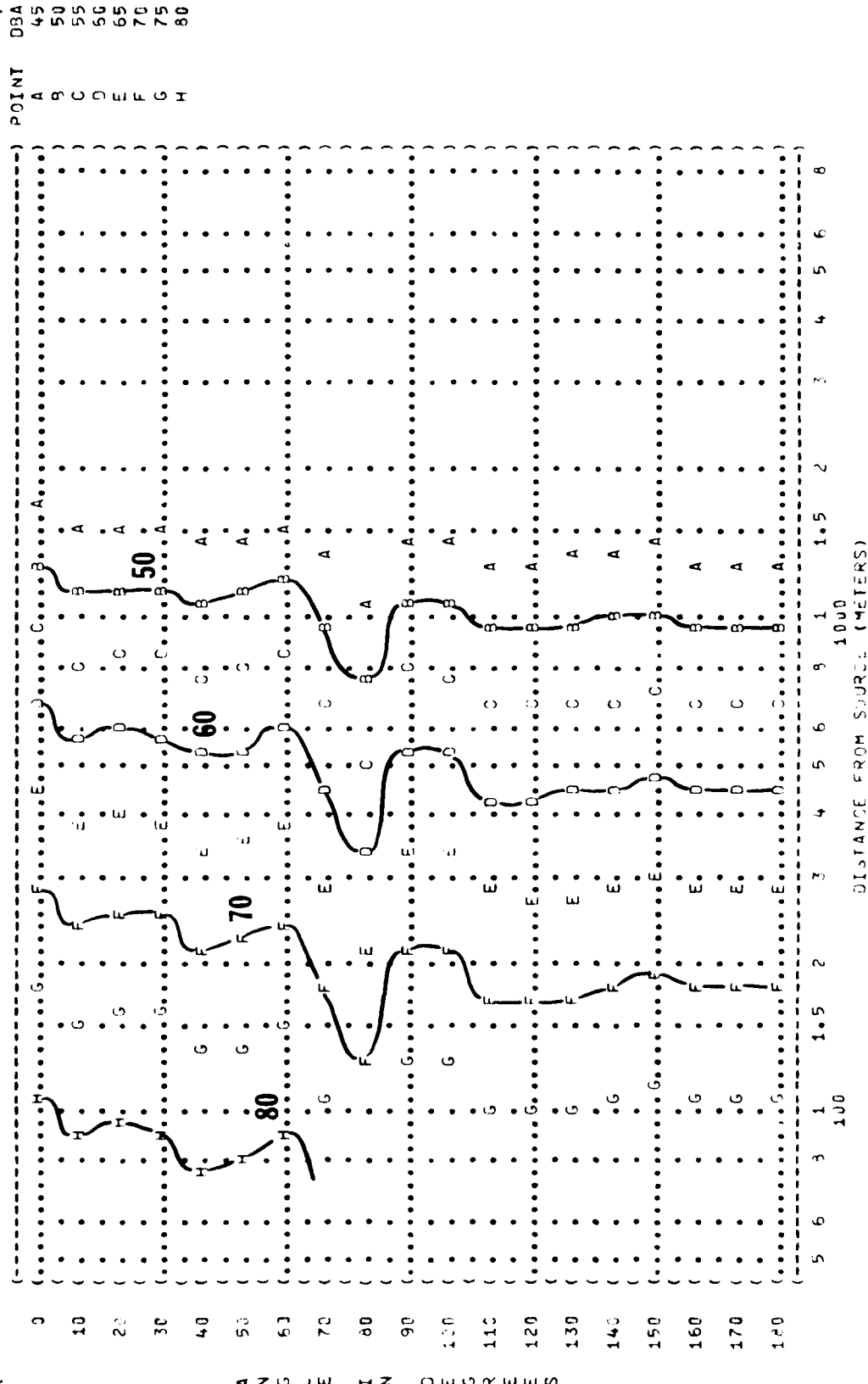
(OPERATION:
(70% RPM
(SINGLE EN
(GROUND RU
(

(NOISE SOURCE/SUBJECT:
(A-7 AIRCRAFT IN THE
(AF32A-24 SUPPRESSOR
(ENGINE TF41-A-1
(FAR-FIELD NOISE

POINT

420 J W H Z 06064 W W W

DISPATCH FROM SOURCE (METERS)
1030



A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
EQUAL LEVEL CONTOURS (CBA)

IDENTIFICATION:

A 1.4

TEST 77-833-001

04 RUN

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

METEOROLÓG Y:

TEMP = 15 C

BAR PRESS = .760 H H5

REF HINTO = 70 %

OPERATION:

MILITARY POWER, 96% RPM

SINGLE ENGINE

SUPPRESSED GROUND RUNUP

NOISE SOURCE/SUBJECT:

A-70 AIRCRAFT IN THE

AF 32A-19 SUPPRESSOR

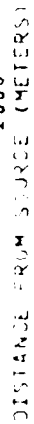
ENGINE TF41-A-1

MISSION

A-70

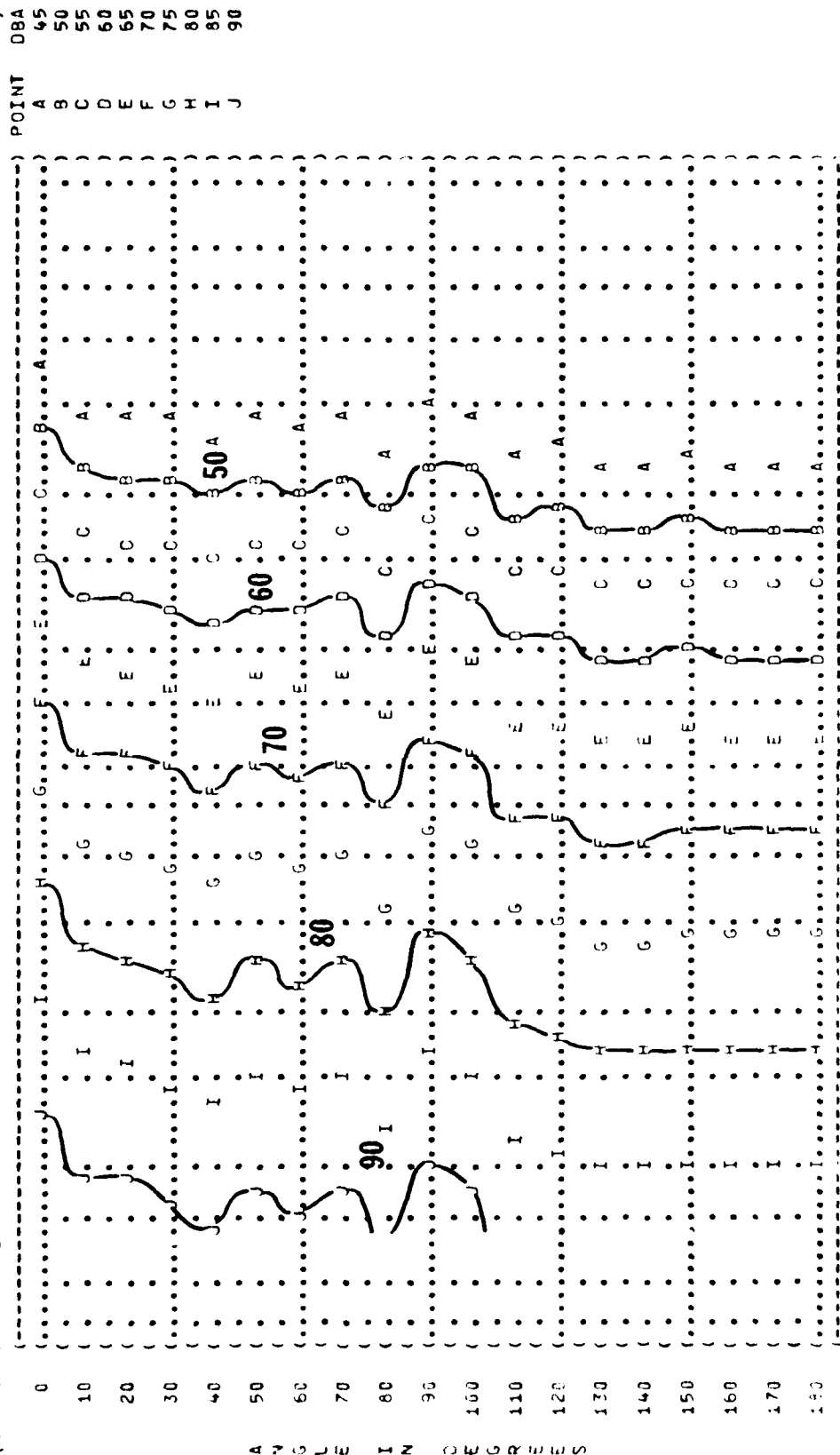
AF 32A-

ENGINE



4 Z 6 J W H Z O W 6 X U W V

(FIGURE 1 : A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7 EQUAL LEVEL CONTOURS (CBA)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 78-833-001
 () RUN 04
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () 20 NOV 79
 () PAGE 15
 ()



A V G L E I N O E G R S S

8



IDENTIFICATION:)
)
)

) OMEGA 1.4)

) RUN 01)
))
) 20 NOV 79)
))
) PAGE 16)

```

( OPERATION:
( IDLE POWER (54.4% RPM)
( SINGLE ENGINE
( GROUND RUNUP (SUPPRESSED)

```

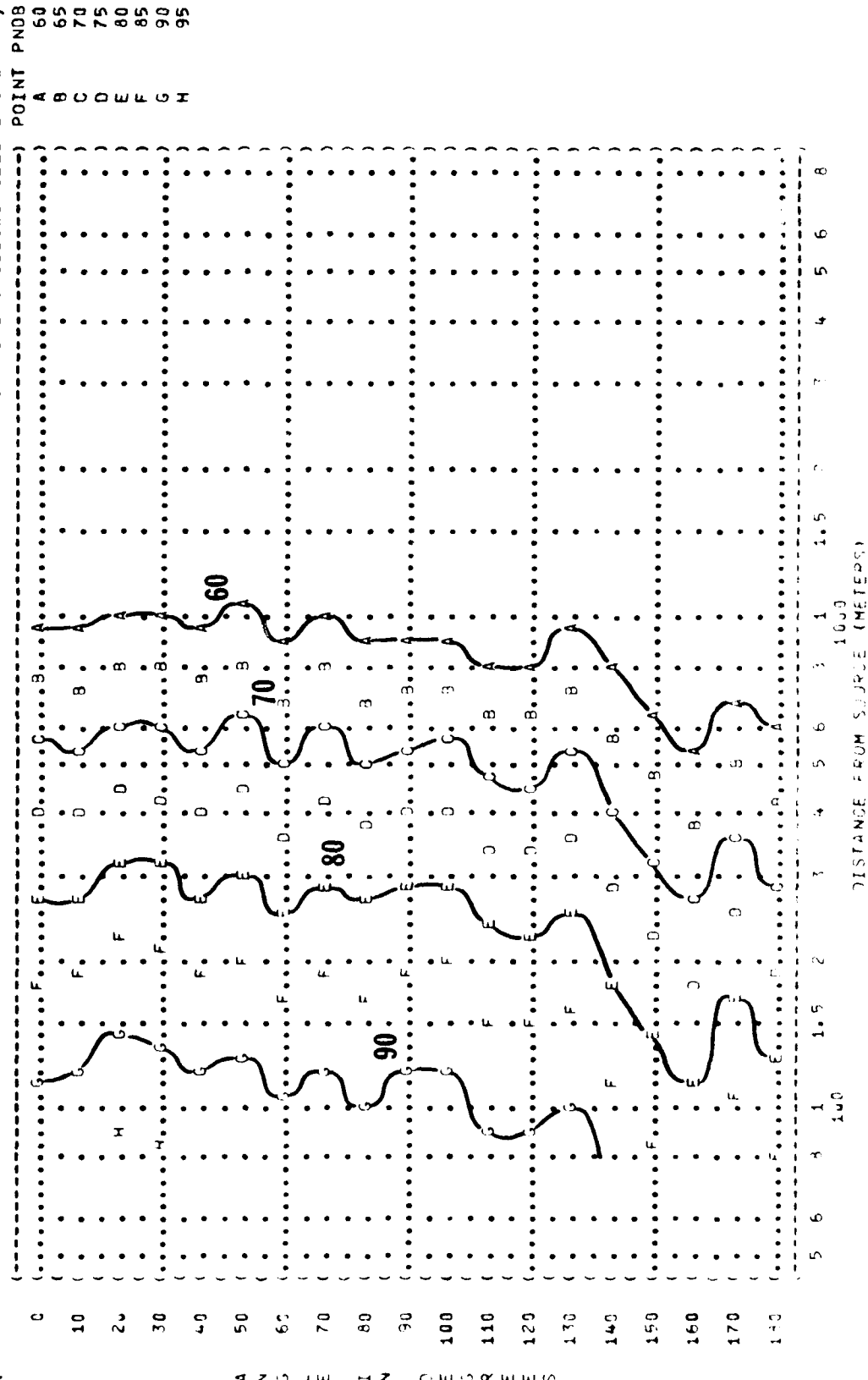
) RUN 01)
))
) 20 NOV 79)
))
) PAGE 16)



FIGURE 1 PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

8

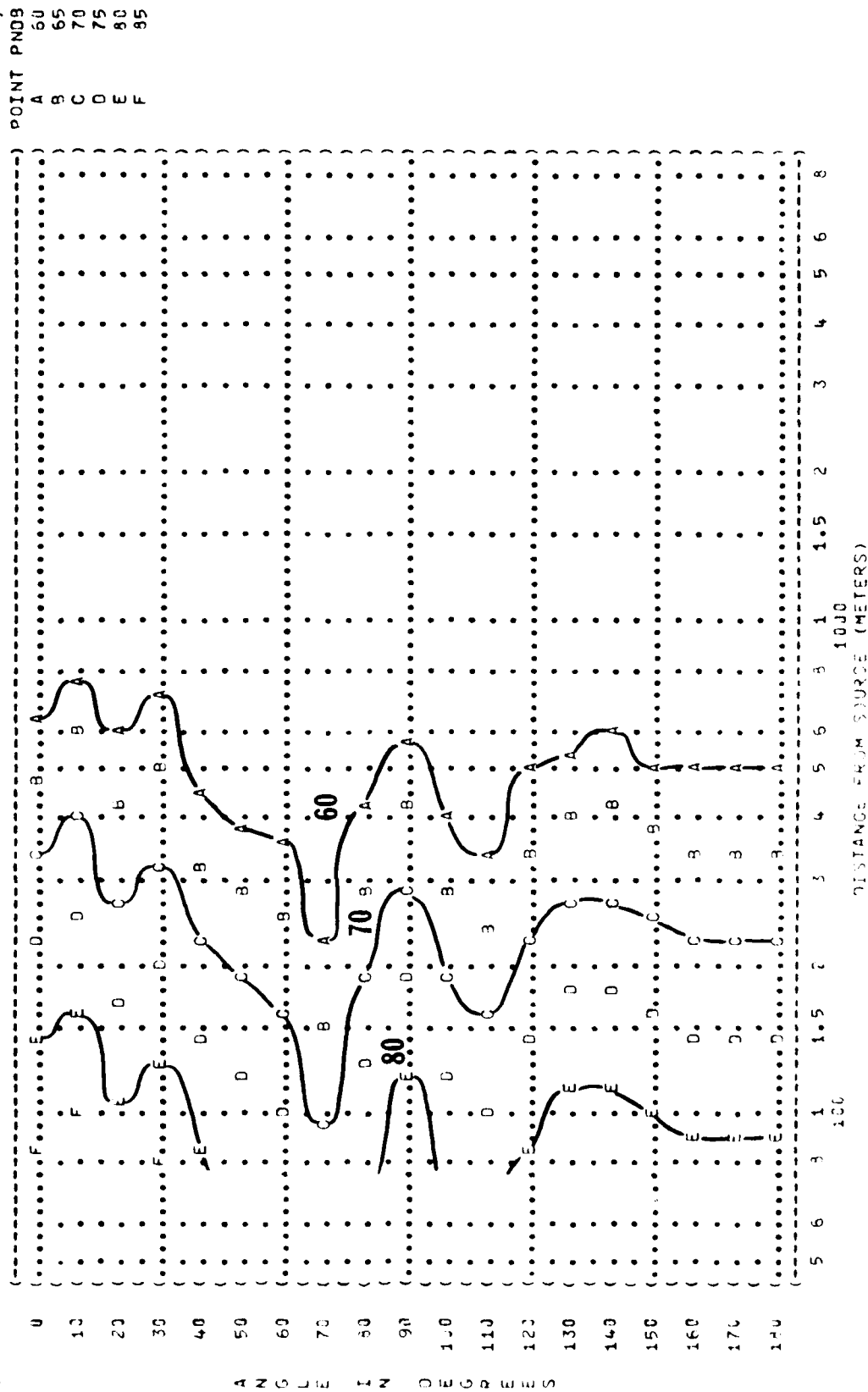
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:)
(A-7D AIRCRAFT IN THE (70% RPM, ENGINE RUNUP) TEMP = 15 C) OMEGA 1.4
(AF32A-19 SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG) TEST 77-833-001
(ENGINE TF41-A-1 (SUPPRESSED GROUND RUNUP) REL HUMID = 70 %) RUN 02
(FAR FIELD NOISE ())) PAGE 16



∞

NOISE SOURCE/SUBJECT: (OPERATION: (70% RPM ()
A-7 AIRCRAFT IN THE (SINGLE ENGINE ()
AF32A-24 SUPPRESSOR (GROUND R ()
ENGINE TF41-A-1 ()
FA-2-FIELD NOISE ()

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 H HG
REL HUMID = 70 %



| | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|-----|-----|
| POINT | A | B | C | D | E | F | G | H | I | J |
| PN08 | 63 | 65 | 73 | 75 | 80 | 85 | 90 | 95 | 100 | 105 |

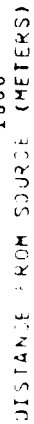


FIGURE 1: REFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 EQUAL LEVEL CONTOURS (LB)

9

NOISE SOURCE/SUBJECT: () IDENTIFICATION: ()
 () A-7 AIRCRAFT IN THE () OMEGA 1.4
 () AF12A-24 SUPPRESSOR () TEST 76-033-001
 () ENGINE TF41-A-1 () RUN 51
 () FAR-FIELD NOISE () PAGE 17

OPERATION: () METEOROLOGY: ()
 () IDLE POWER (94.4% RPM) () TEMP = 15 C
 () SINGLE ENGINE () SAR PRESS = .760 M Hg
 () GROUND RUNUP (SUPPRESSED) () REL HUMID = 70 %

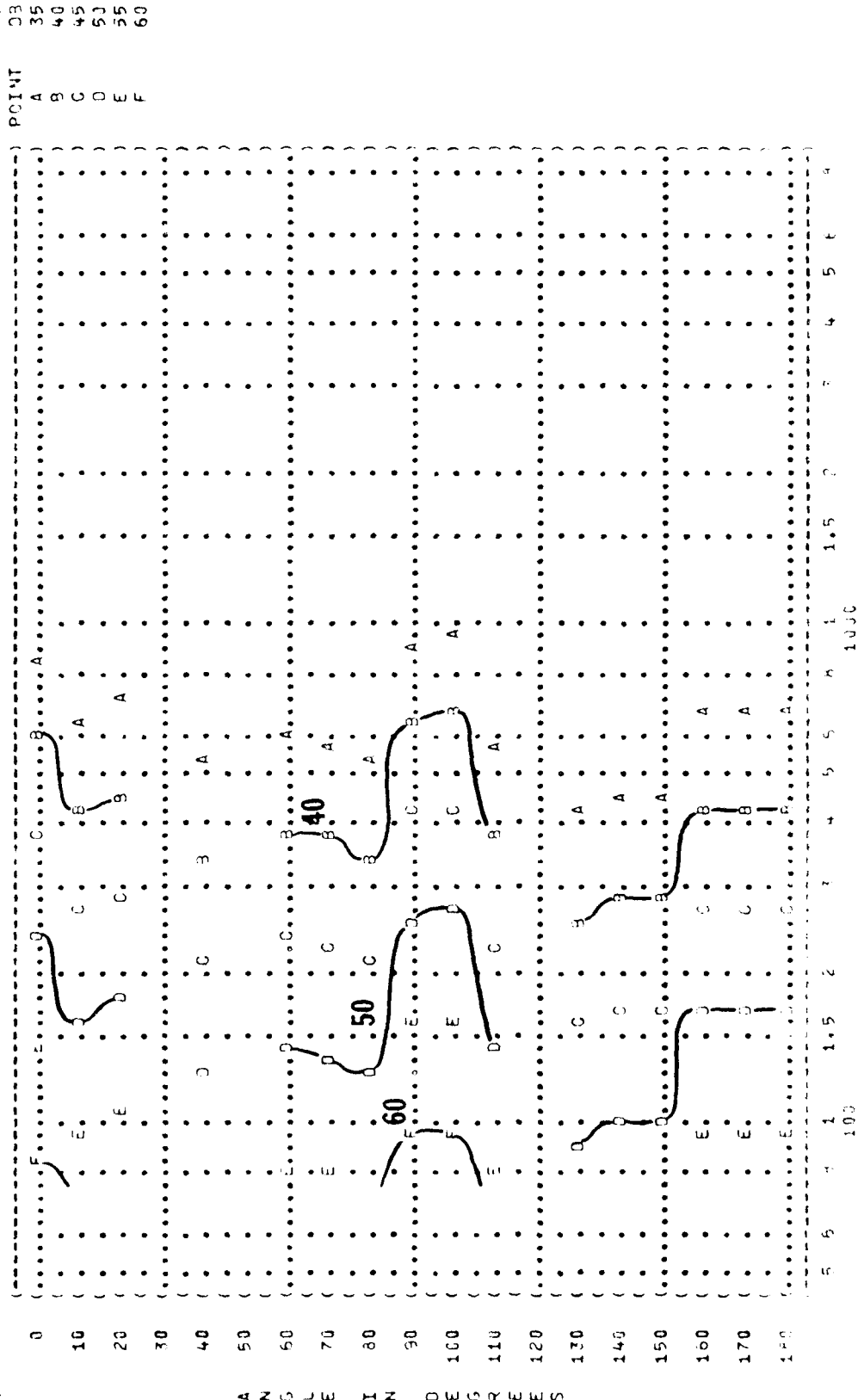


FIGURE 1: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (dB)

TEOROLOGY: = 15 C
TEMP = 15 C
BAR PRESS = .760 H HG
REL HUMID = 70 %

(OPERATION:
(70% RPM
(SINGLE EV
(GROUND RU
(

NOISE SOURCE/SUBJECT:
A-7 AIRCRAFT IN THE
AF32A-24 SUPPRESSOR
ENGINE YF41-A-1
FAR-FIELD NOISE



DISTANCE FROM SOURCE (METERS)

1

9
 IDENTIFICATION: OMEGA 1.4
 TEST 23-23-001
 RUN 03
 20 NOV 79
 PAGE 17
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 OPERATIONS:
 85.5% RPM
 SINGLE ENGINE
 GROUND RINOP (SUPPRESSED)
 NOISE SOURCE/SUBJECT:
 F-7 AIRCRAFT IN THE
 AF32A-24 SUPP-LESSON
 ENGINE 1F41-A-1
 FAR-FIELD NOISE



POINT
 A
 B
 C
 D
 E
 F
 G
 H
 I

FIGURE 1. PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (dB)

OMEGA 1.4

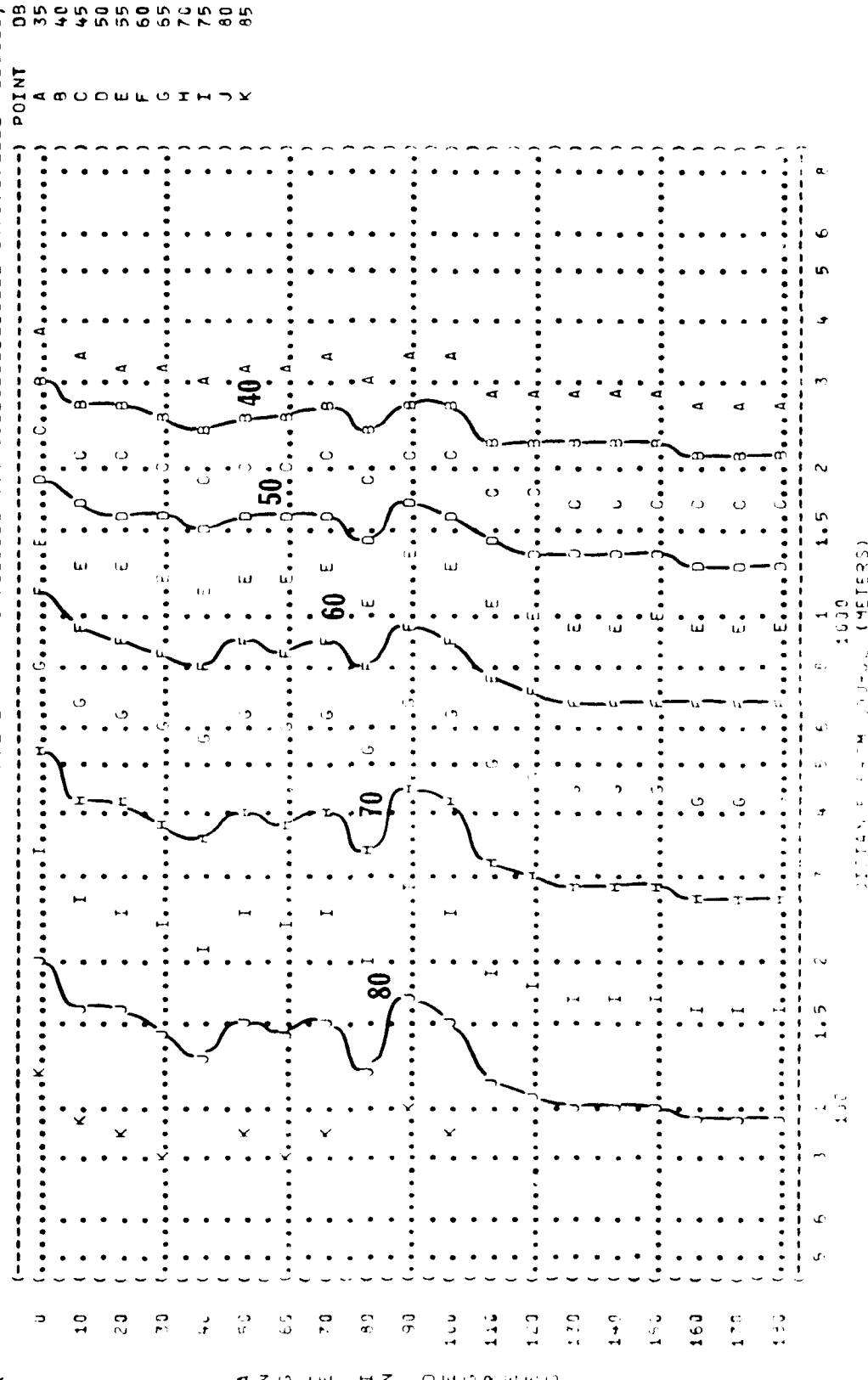
TEMP = 15 C
BAR PRESS = .769 M HS
REL HUMID = 70 %



100

11

| FIGURE: | PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) | EQUAL LEVEL CONTOURS (DB) | IDENTIFICATION: |
|-----------------------|--|---------------------------|-----------------|
| 9 | | | |
| NOISE SOURCE/SUBJECT: | OPERATION: | METEOROLOGY: | |
| A-7 AIRCRAFT IN THE | MILITARY POWER (97.7%) | TEMP = 15 C | |
| AF32A-24 SUPPRESSOR | SINGLE ENGINE | BAR PRESS = .760 M HG | |
| ENGINE TF41-A-1 | GROUND RUNUP (SUPPRESSED) | REL HUMID = 70 % | |
| FAR-FIELD NOISE | | | PAGE 17 |



0< ()
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120< ()
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160< ()
170< ()
180< ()

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

NO PROTECTION
MINIMUM GPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
M-133 GROUND COMMUNICATION UNIT

AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

NO PROTECTION

AMERICAN OPTICAL 1700 EAR MUFFS

COMFIT TRIPLE FLANGE EAR PLUGS

H-133 GROUND COMMUNICATION UNIT

| 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | | | | |
|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |


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( ( NOISE SOURCE/SUBJECT:
( ( A-70 AIRCRAFT IN THE
( ( AF32A-19 SUPPRESSOR
( ( ENGINE TF41-A-1
( ( FAR FIELD NOISE

( ( OPERATION:
( ( 85% RPM, ENGINE RUNUP
( ( SINGLE ENGINE
( ( SUPPRESSED GROUND RUNUP

( ( METEOROLOGY:
( ( TEMP = 15 C
( ( BAR PRESS = .760 M HG
( ( REL HUMID = 70 %

( ( ) RUN 03
( ( )
( ( ) 20 NOV 79
( ( )
( ( )
( ( ) PAGE 7

```

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180

A B C D

120 100 110 130

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FIGURE 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) IDENTIFICATION

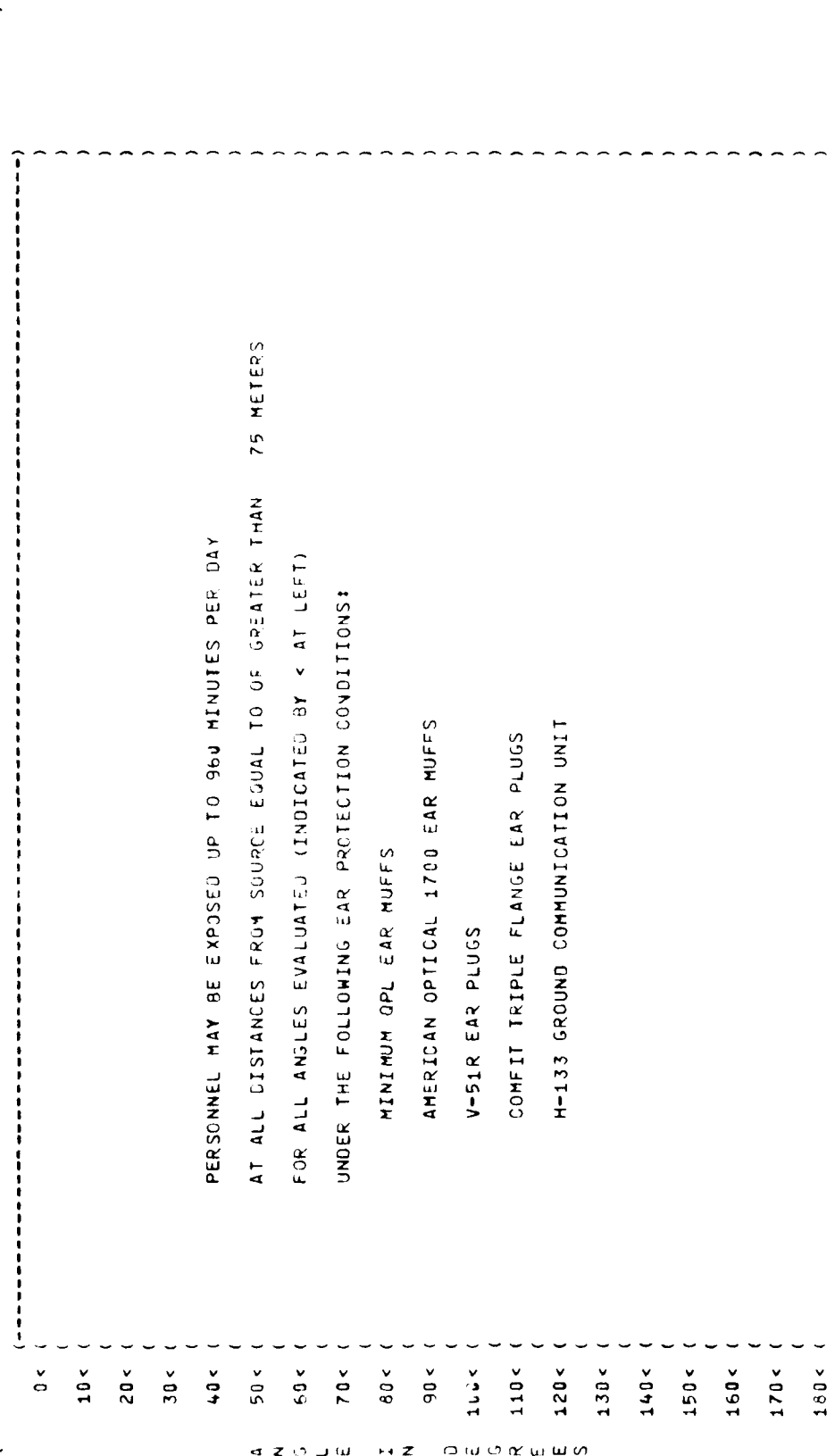
NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY: OMEGA 1.4

A-70 AIRCRAFT IN THE 85% RPM, ENGINE RUNUP TEMP = 15 C TEST 77-833-P01

AF32A-19 SUPPRESSOR SINGLE ENGINE BAR PRESS = .760 M HG RUN 03

ENGINE TF41-A-1 SUPPRESSED GROUND RUNUP REL HUMID = 70 % 20 NOV 79

FAR FIELD NOISE PAGE 8



PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY

AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS

FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)

UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM OPL EAR MUFFS

AMERICAN OPTICAL 1700 EAR MUFFS

V-51R EAR PLUGS

COMFIT TRIPLE FLANGE EAR PLUGS

H-133 GROUND COMMUNICATION UNIT

100 1000

5 6 8 1 1.5 2 3 4 5 6 3 1 1.5 2 3 4 5 6 8

DISTANCE FROM SOURCE (METERS)


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(-----)
( ) NOISE SOURCE/SUBJECT: ( ) OPERATION: ( ) METEOROLOGY: ( ) IDENTIFICATION: ( )
( ) A-7 AIRCRAFT IN THE ( ) 35.5% RPM ( ) TEMP = 15 C ( ) )
( ) AF32A-24 SUPPRESSOR ( ) SINGLE ENGINE ( ) BAR PRESS = .750 M HG ( ) )
( ) ENGINE T641-A-1 ( ) GROUND RUNUP (SUPPRESSED) ( ) REL HUMID = 70 % ( ) )
( ) FAR-FIELD NOISE ( ) ( ) ( ) PAGE 8 ( ) )
(-----)

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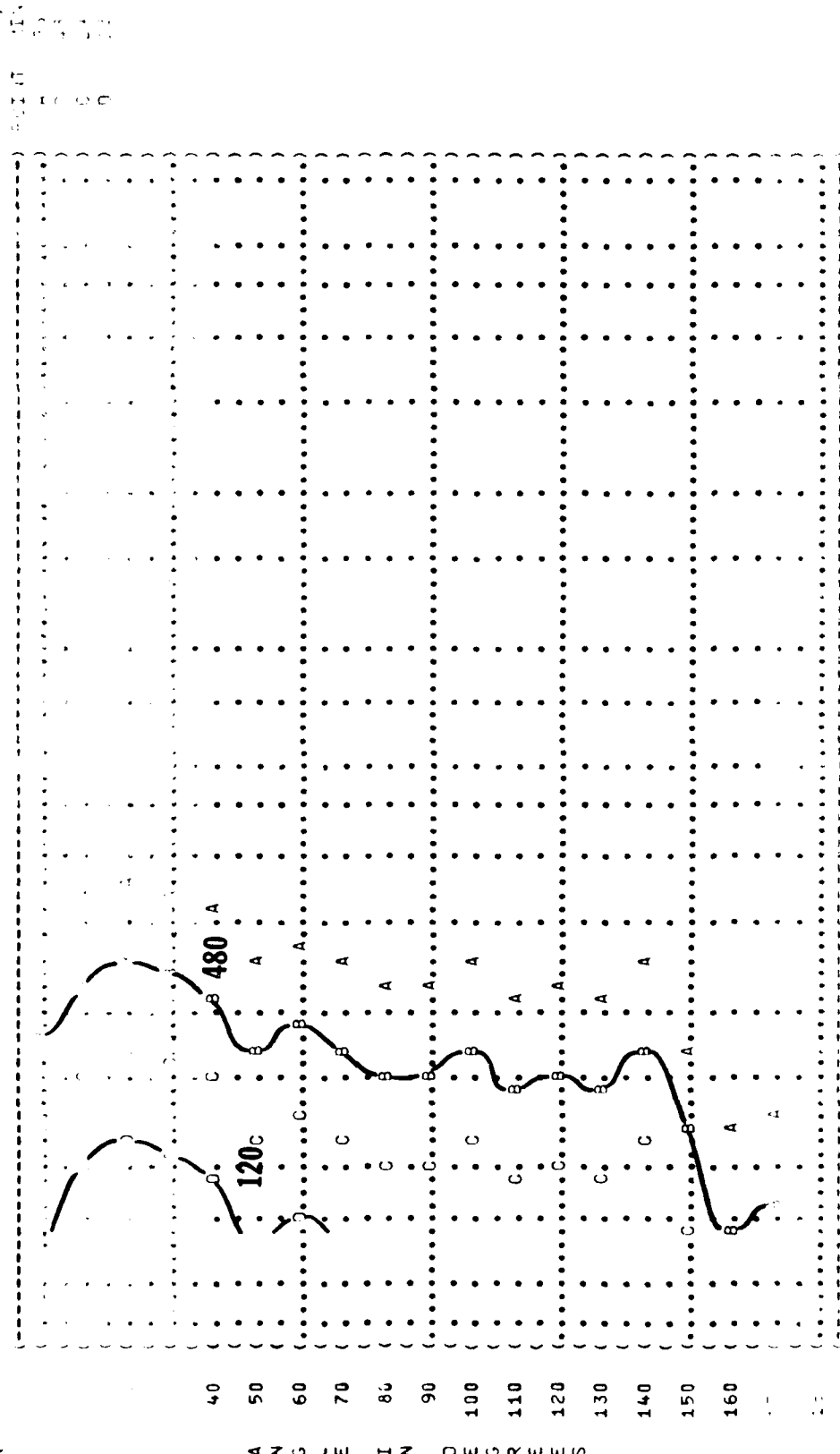
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| 100< | |
| 110< | |
| 120< | |
| 130< | |
| 140< | |
| 150< | |
| 160< | |
| 170< | |
| 180< | |

PERSONNEL MAY BE EXPOSED UP TO 900 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY \times AT LEFT)
UNDER THE FOLLOWING EAS PROTECTION CONDITIONS:

MINIMUM OPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

| DISTANCE FROM SOURCE (METERS) | | | | | | | | | | |
|-------------------------------|-----|---|---|-----|---|---|---|---|-----|---|
| 1000 | | | | | | | | | | |
| 1 | 1.5 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 1.5 | |
| 5 | 6 | 3 | 1 | 1.5 | 2 | 3 | 4 | 5 | 6 | 8 |

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (APR 161-35, JULY 73)) IDENTIFICATION:)
 (10) EQUAL TIME CONTOURS (MINUTES))
 (NO PROTECTION)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 (A-7D AIRCRAFT IN THE) (MILITARY POWER, 96% RPM) TEMP = 15 C)
 (AF32A-19 SUPPRESSOR) (SINGLE ENGINE) BAR PRESS = .76C M HG)
 (ENGINE TF41-A-1) (SUPPRESSED GROUND RUNUP) REL HUMID = 70 %)
 (FAR FIELD NOISE) () PAGE 7)



```
( ( NOISE SOURCE/SUBJECT: ) ) METEOROLOGY: ) OMEGA 1.4  

( ( A-70 AIRCRAFT IN THE ) ) TEMP = 15 C )  

( ( AF32A-19 SUPPRESSOR ) ) BAR PRESS = .760 M HG )  

( ( ENGINE TF41-A-1 ) ) REL HUMID = 70 % )  

( ( FAR FIELD NOISE ) ) PAGE 8 )
```

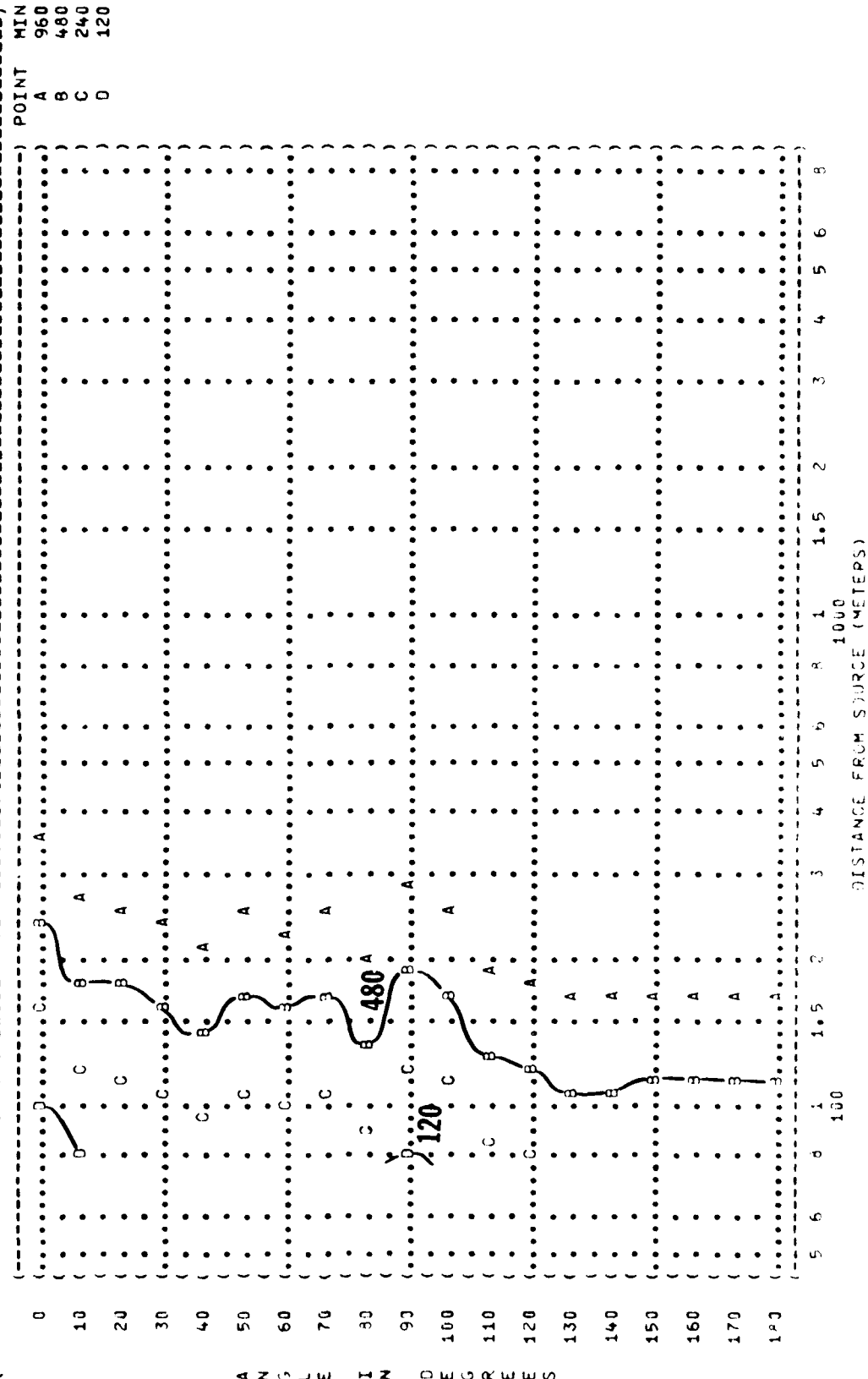
PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY \angle AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM OPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)

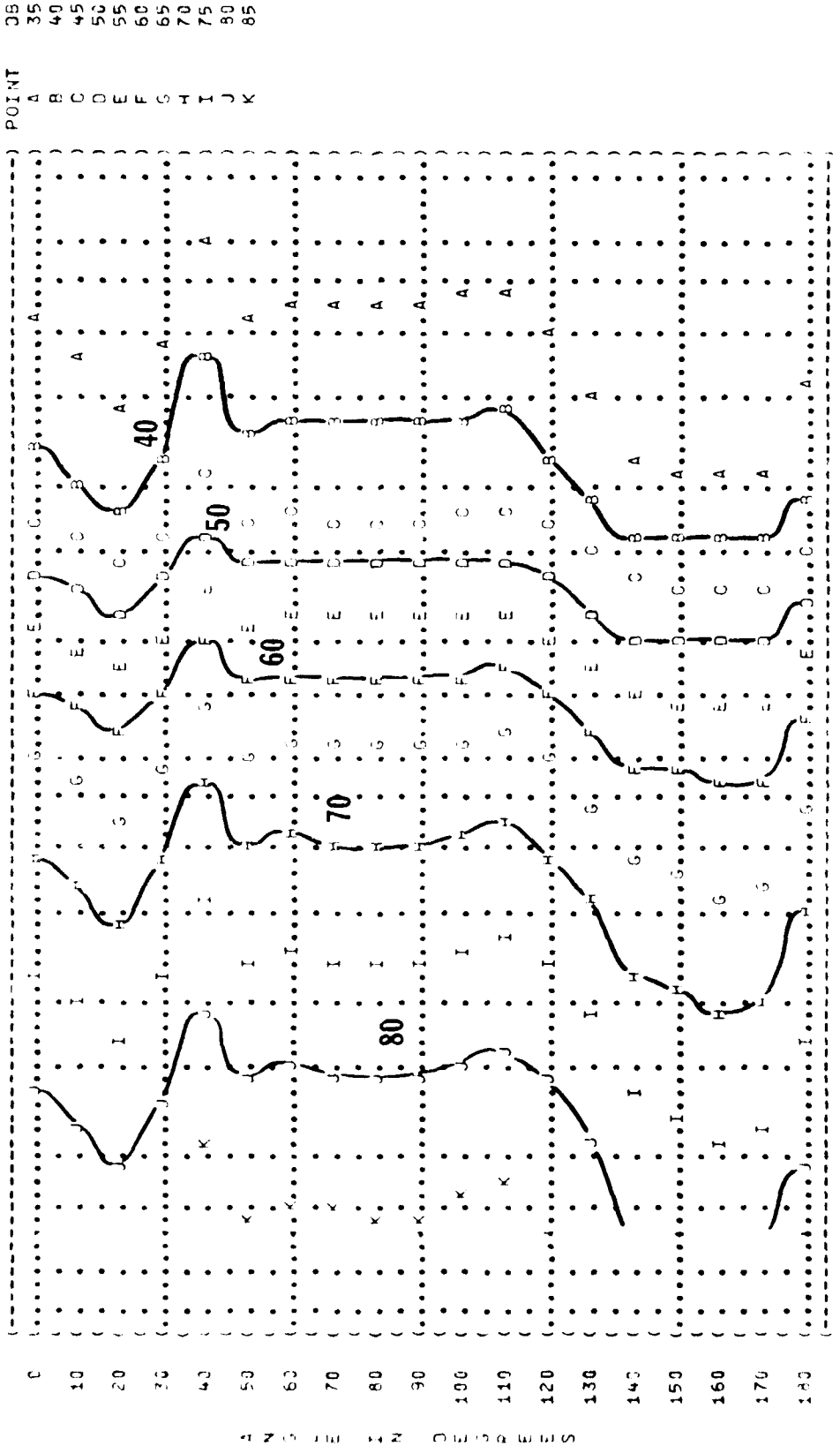
PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

| |
|---------------------------------|
| MINIMUM QPL EAR MUFFS |
| AMERICAN OPTICAL 1700 EAR MUFFS |
| V-51R EAR PLUGS |
| COMFIT TRIPLE FLANGE EAR PLUGS |
| H-133 GROUND COMMUNICATION UNIT |

[illegible]

420 JEW HZ DEGRADATION

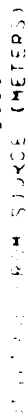
IDENTIFICATION: OMEGA 1.4
 TEST 77-033-031
 RUN 01
 METEOROLOGICAL: TEMPERATURE = 15 C
 BAR PRESSURE = .760 MM HG
 REL HUMIDITY = 70 %
 OPERATION: 1000 RPM, 50% RPM
 ENGINE ENGINE
 SUPPRESSED GROUND NOISE
 FAR FIELD NOISE



DISTANCE FROM SOURCE (METERS)
 0 100 1000 10000

11



[illegible]

99

IDENTIFICATION

OMEGA 1.4

TEST 823-001

QUN 01

20 NOV 79

PAGE 23

MEET POINT = 15 C

TEMP = 15 C

BAR PRESS = 750 M Hg

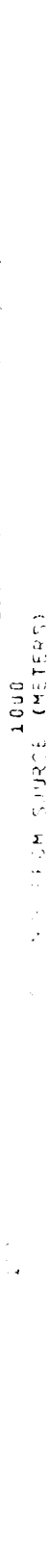
REL HUMID = 70 %

ENGINE RUN

ENGINE TEST

ENGINE NOISE



[illegible]

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AIR FORCE AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATT--ETC F/G 1/3
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 130. A-7 AIRC--ETC(U)
JUL 80 R A LEE
AMRL-TR-75-50-VOL-130

UNCLASSIFIED

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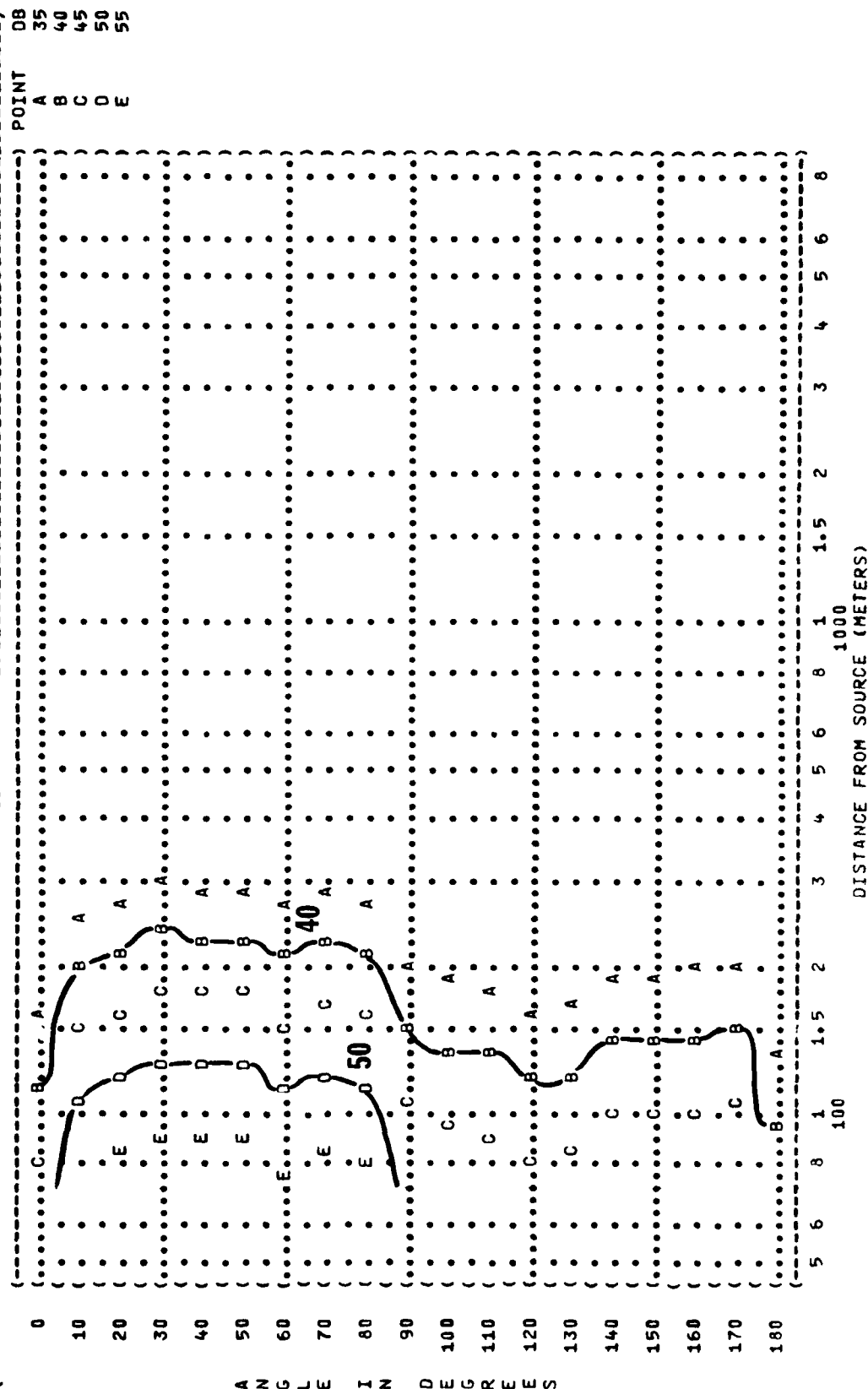
END

DATE
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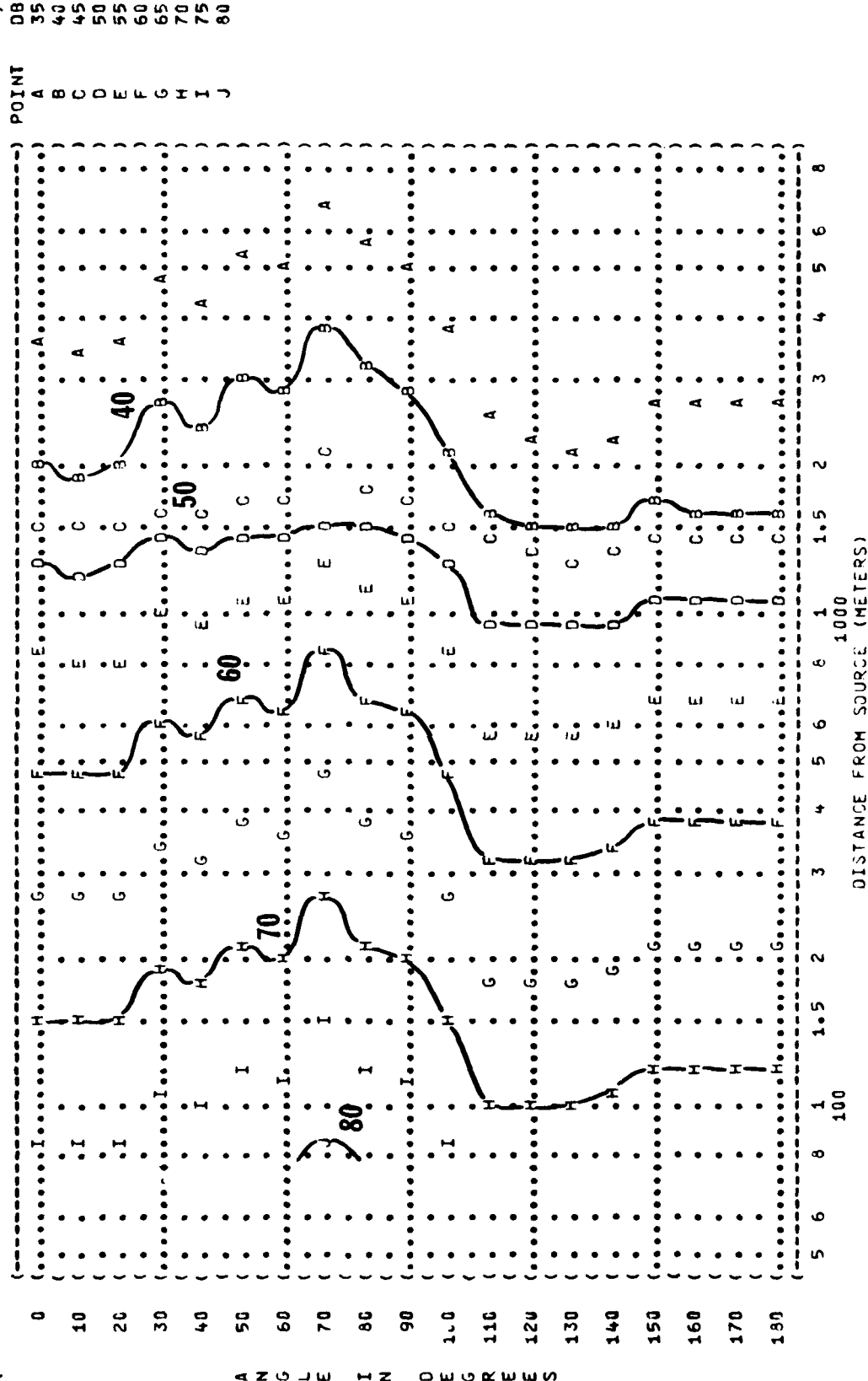
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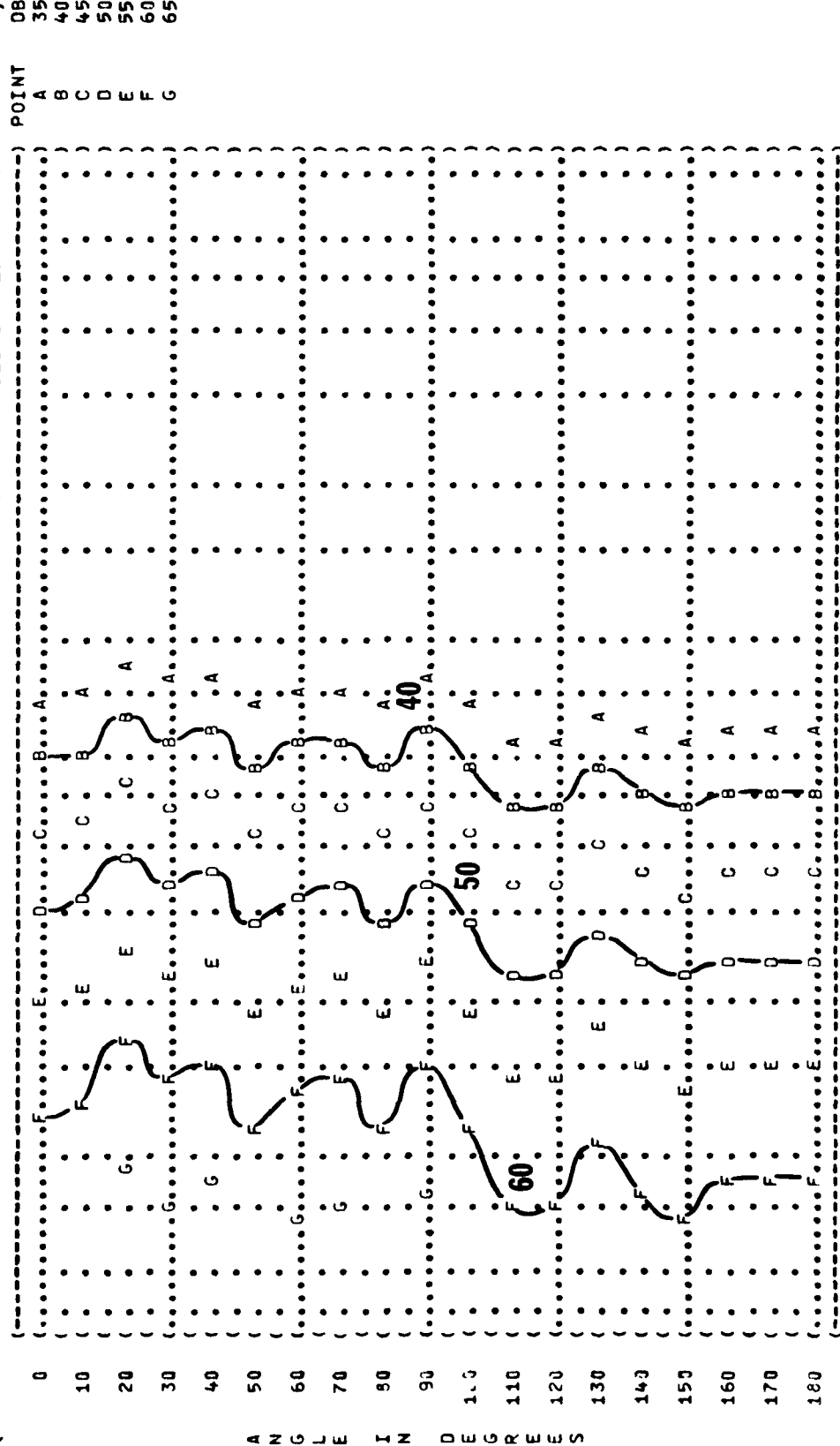
(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (11 EQUAL LEVEL CONTOURS (DB)))
 (8000 HZ OCTAVE BAND))
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (A-70 AIRCRAFT IN THE) IDLE PWR, 55% RPM) TEMP = 15 C)
 (AF32A-19 SUPPRESSOR) SINGLE ENGINE) BAR PRESS = .760 M HG)
 (ENGINE TF41-A-1) SUPPRESSED GROUND RUNUP) REL HUMID = 70 %)
 (FAR FIELD NOISE)) PAGE 26)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (A-7 AIRCRAFT IN THE (IDLE POWER (54.4% RPM)
 (AF32A-24 SUPPRESSOR (SINGLE ENGINE
 (ENGINE TF41-A-1 (GROUND RUNUP (SUPPRESSED)
 (FAR-FIELD NOISE ()
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 18
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 78-833-101
 () RUN 01
 () 20 NOV 79
 () POINT DB
 () A 35
 () B 40
 () C 45
 () D 50
 () E 55
 () F 60
 () G 65
 () H 70
 () I 75
 () J 80

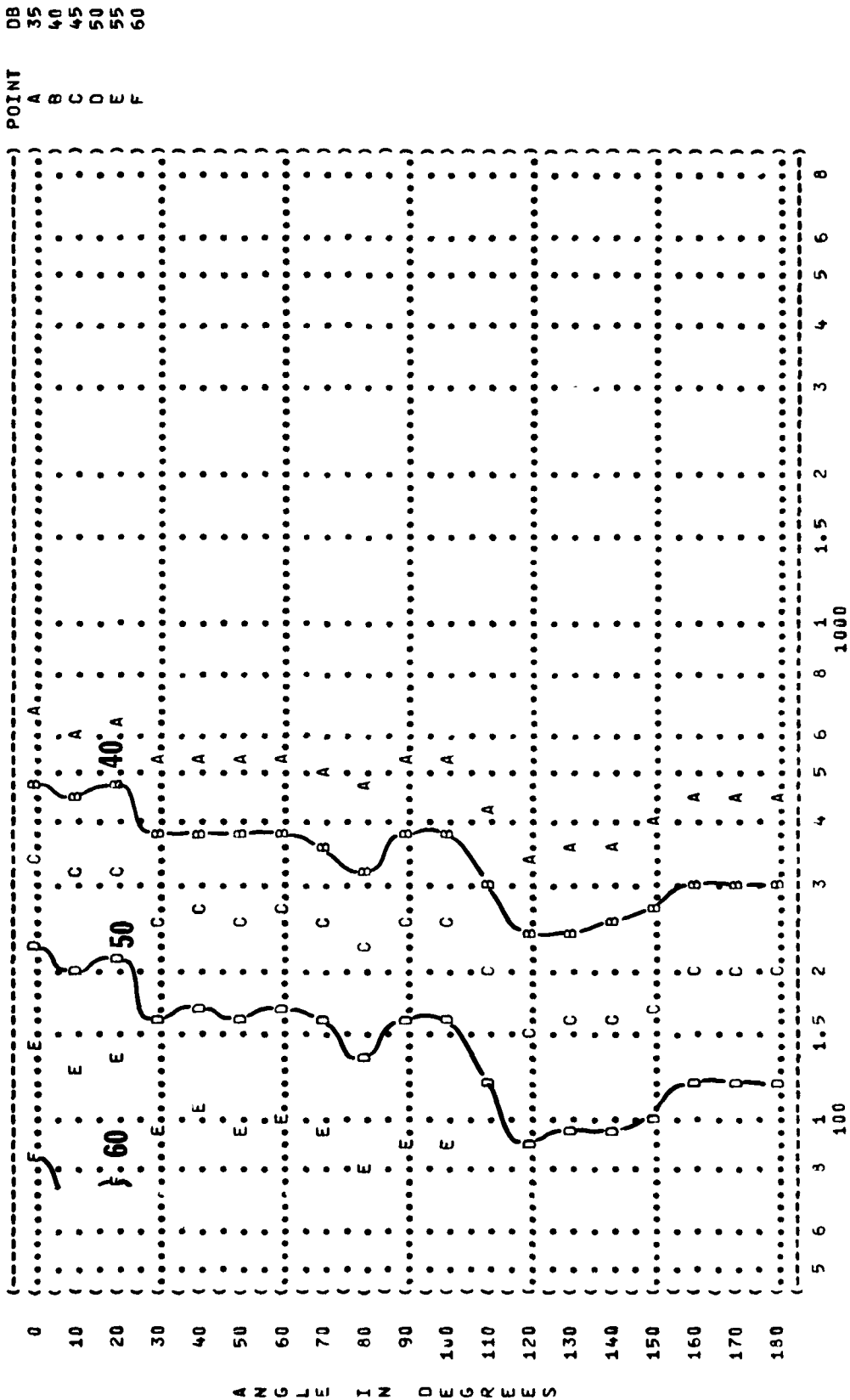


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-7 AIRCRAFT IN THE
 (AF32A-24 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR-FIELD NOISE
 (OPERATION:
 (IDLE POWER (54.4% RPM)
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-001
 (RUN 01
 (20 NOV 79
 (PAGE 20



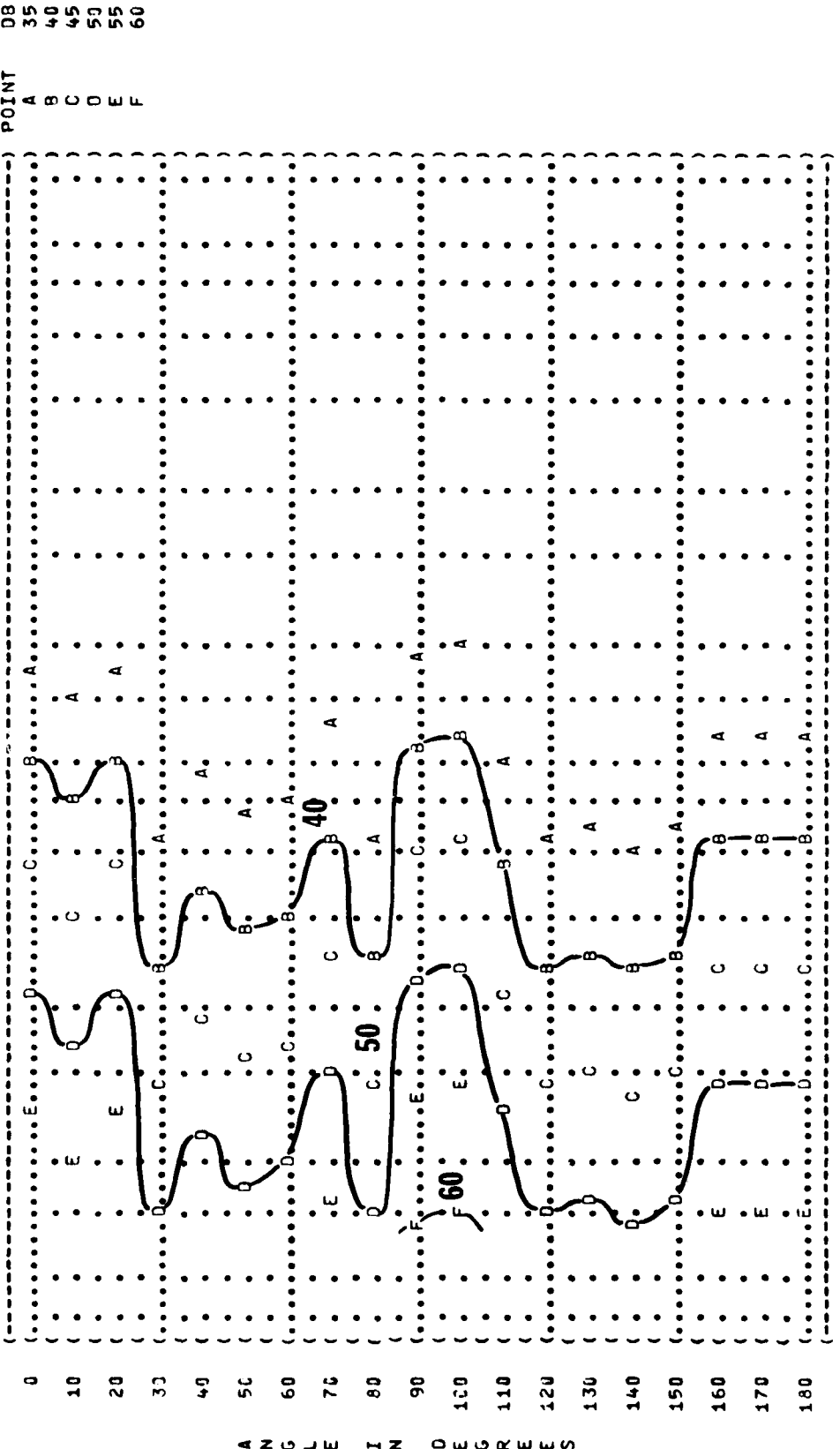
5 6 8 1 1.5 2 3 4 5 6 8
 100
 1030
 DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (11 EQUAL LEVEL CONTOURS (DB)))
 (250 HZ OCTAVE BAND) OMEGA 1.4)
 () TEST 78-833-001)
 () RUN 01)
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 () IDLE POWER (54.4% RPM)) TEMP = 15 C)
 () SINGLE ENGINE) BAR PRESS = .760 M HG)
 () ENGINE TF41-A-1) GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %)
 () FAR-FIELD NOISE))
 () PAGE 21)



A N G L E I N D E G R E E S

(FIGURE : SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT :)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION :)
 (IDLE POWER (54.4% RPM))
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY :)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION :)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 01)
 (20 NOV 79)
 (PAGE 22)



DISTANCE FROM SOURCE (METERS)

FIGURE: SOUND PRESSURE LEVEL (SPL)
 11 EQUAL LEVEL CONTOURS (DB)
 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
 A-7 AIRCRAFT IN THE
 AF32A-24 SUPPRESSOR
 ENGINE TF41-A-1
 FAR-FIELD NOISE

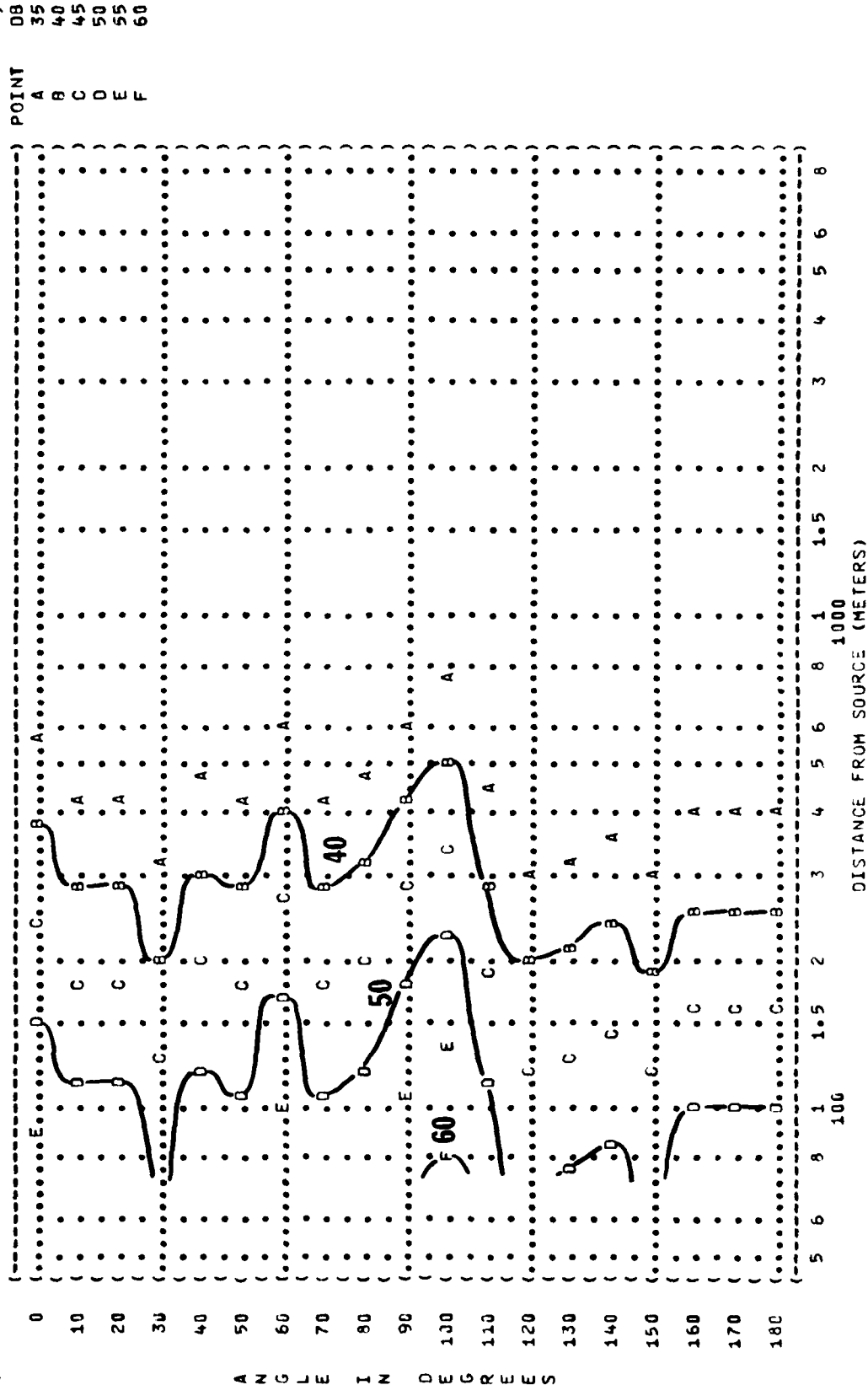
OPERATION:
 IDLE POWER (54.4% RPM)
 SINGLE ENGINE
 GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 H HG
 REL HUMID = 70 %

IDENTIFICATION:
 OMEGA 1.4
 TEST 78-833-001
 RUN 01
 20 NOV 79
 PAGE 23

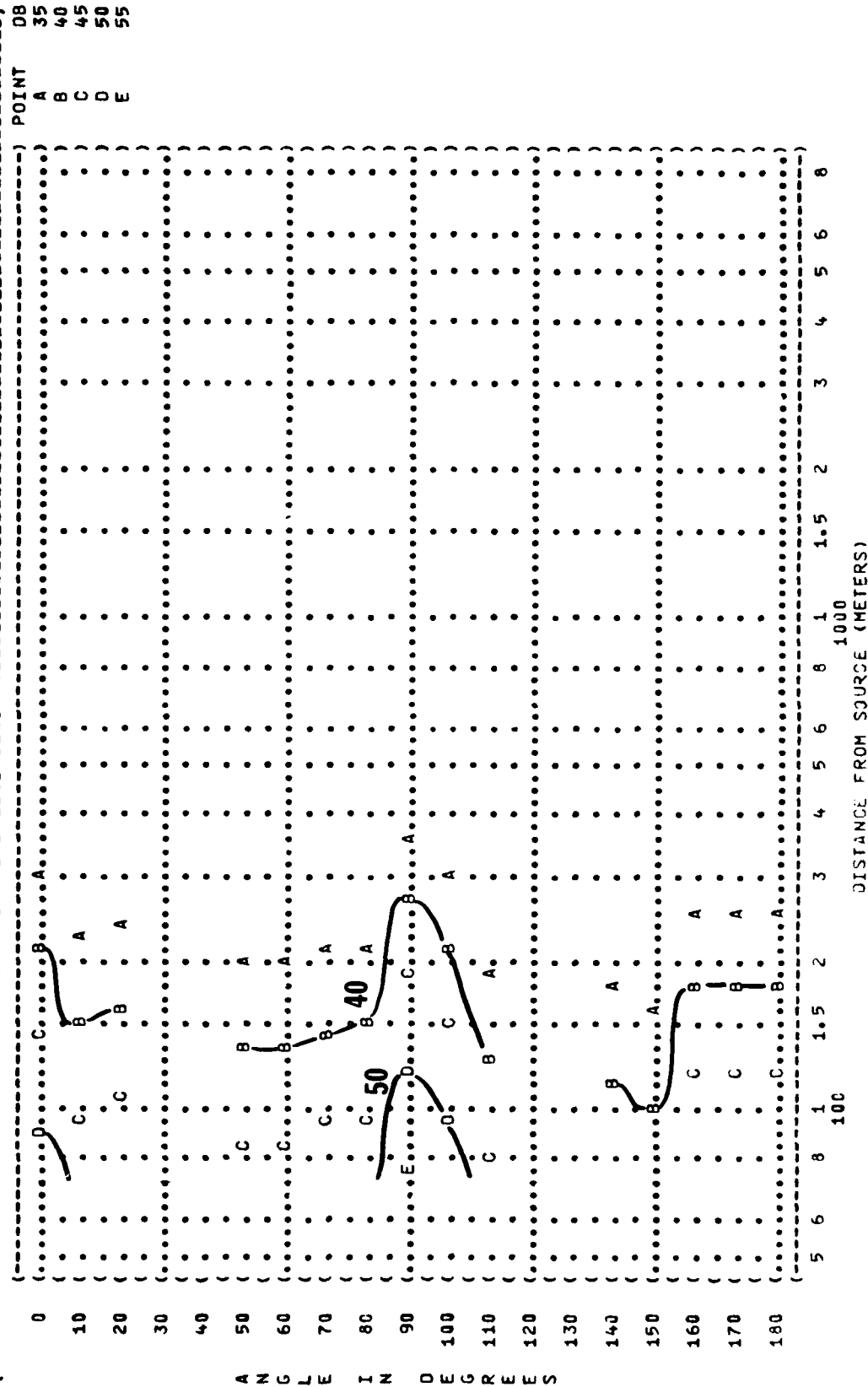


(FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (2000 HZ OCTAVE BAND
 (11
 (NOISE SOURCE/SUBJECT:
 (A-7 AIRCRAFT IN THE
 (AF32A-24 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR-FIELD NOISE
 (OPERATION:
 (IDLE POWER (54.4% RPM)
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-001
 (RUN 01
 (20 NOV 79
 (PAGE 24
 (POINT DB
 (A 35
 (B 40
 (C 45
 (D 50
 (E 55
 (F 60



DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (4300 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-7 AIRCRAFT IN THE
 (AF32A-24 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR-FIELD NOISE
 (OPERATION:
 (IDLE POWER (54.4% RPM)
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-001
 (RUN 01
 (20 NOV 79
 (PAGE 25

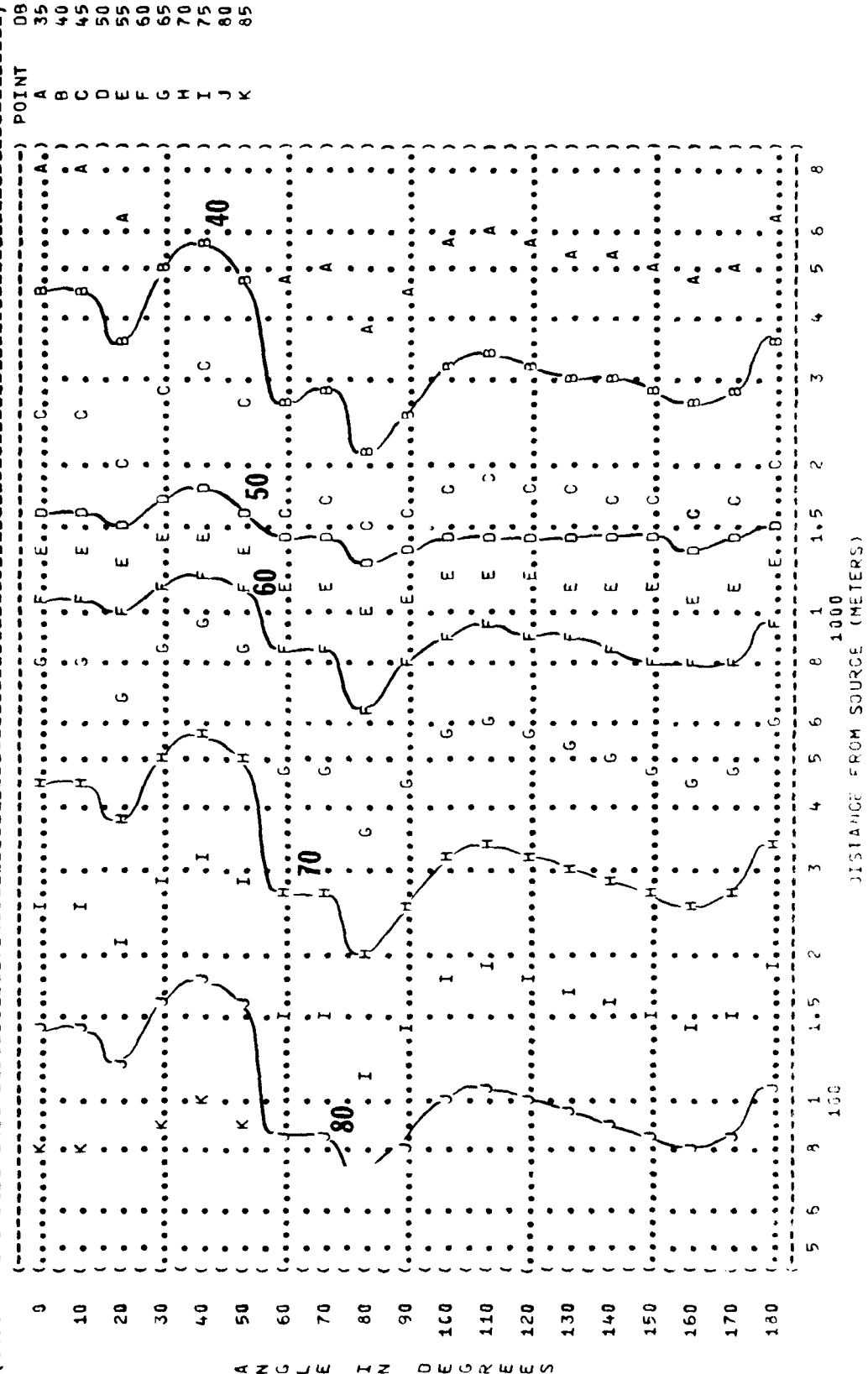


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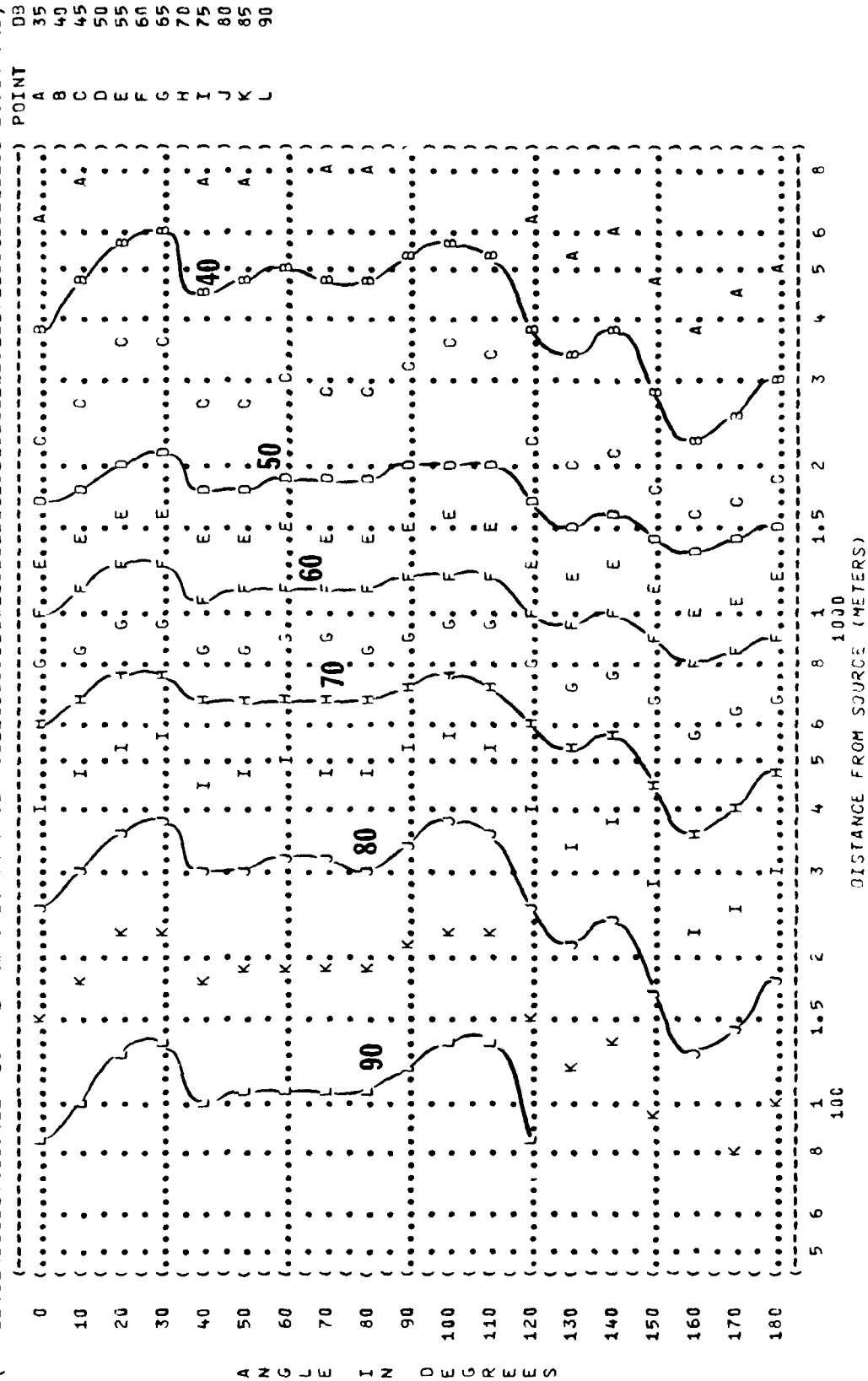
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( FIGURE: SOUND PRESSURE LEVEL (SPL) )
( ( EQUAL LEVEL CONTOURS (DB) )
( ( 8000 HZ OCTAVE BAND )
(-----)
( NOISE SOURCE/SUBJECT: )
( ( A-7 AIRCRAFT IN THE )
( ( AF32A-24 SUPPRESSOR )
( ( ENGINE TF41-A-1 )
( ( FAR-FIELD NOISE )
(-----)
( OPERATION: )
( ( IDLE POWER (54.4% RPM) )
( ( SINGLE ENGINE )
( ( GROUND RUNUP (SUPPRESSED) )
(-----)
( METEOROLOGY: )
( ( TEMP = 15 C )
( ( BAR PRESS = .760 H HG )
( ( REL HUMID = 70 % )
(-----)
( PAGE 26 )
(-----)
( NO CONTOUR DATA---EITHER NO INPUT DATA WERE COMPUTED (=9999.0) )
( OR MINIMUM CONTOUR LEVEL REQUESTED IS GREATER THAN MAXIMUM COMPUTED LEVEL. )
(-----)

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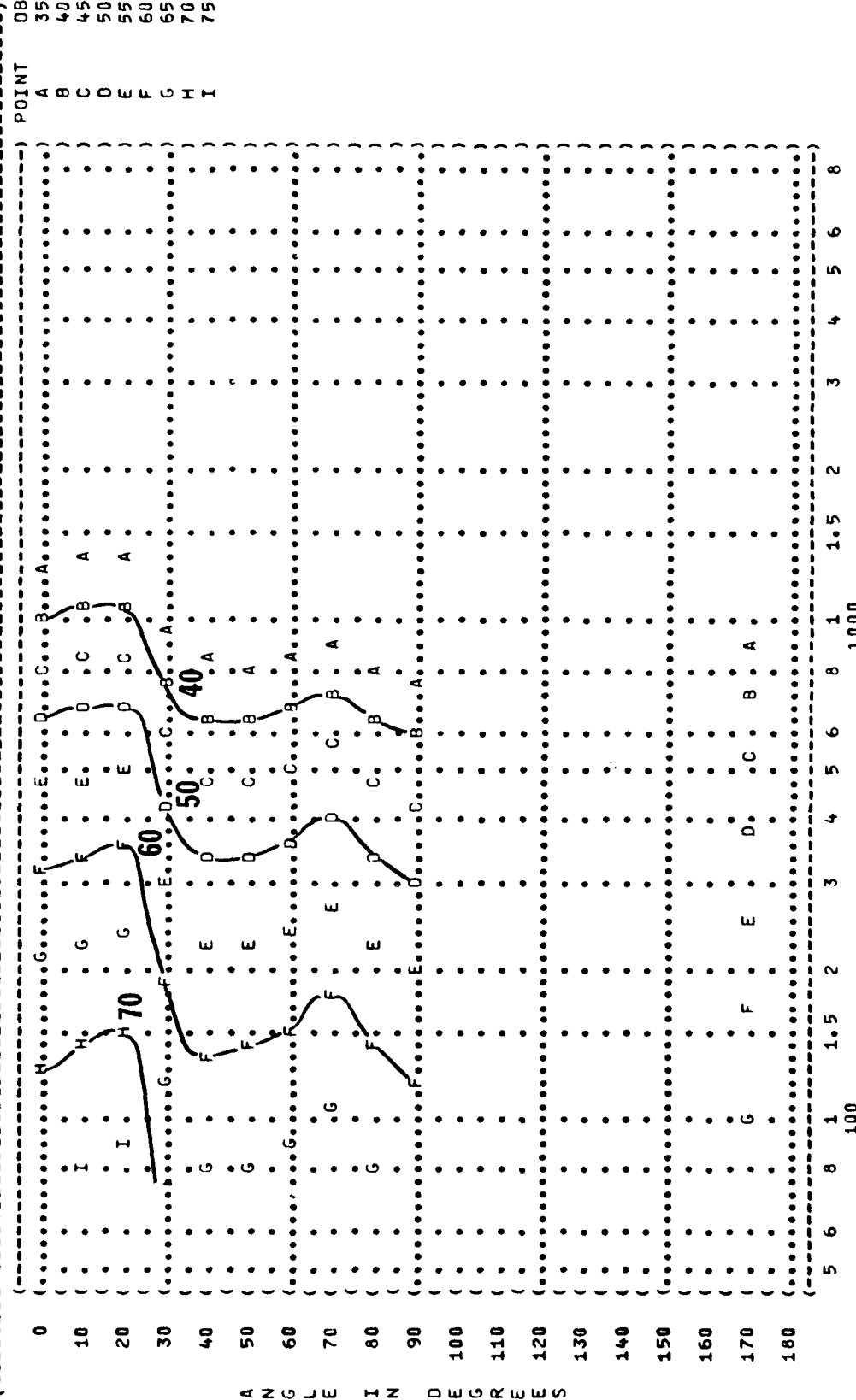
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-70 AIRCRAFT IN THE
 (AF32A-19 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR FIELD NOISE
 (OPERATION:
 (70% RPM, ENGINE RUNUP
 (SINGLE ENGINE
 (SUPPRESSED GROUND RUNUP
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 02
 (20 NOV 79
 (PAGE 18



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (dB)
 (63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-7J AIRCRAFT IN THE
 (AF32A-19 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR FIELD NOISE
 (OPERATION:
 (70% RPM, ENGINE RUNUP
 (SINGLE ENGINE
 (SUPPRESSED GROUND RUNUP
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 19
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 02
 (20 NOV 79

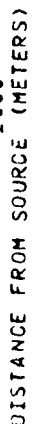


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (250 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-70 AIRCRAFT IN THE)
 (AF32A-19 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR FIELD NOISE)
 (OPERATION:)
 (70% RPM, ENGINE RUNUP)
 (SINGLE ENGINE)
 (SUPPRESSED GROUND RUNUP)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-833-001)
 (RUN 02)
 (20 NOV 79)
 (PAGE 21)



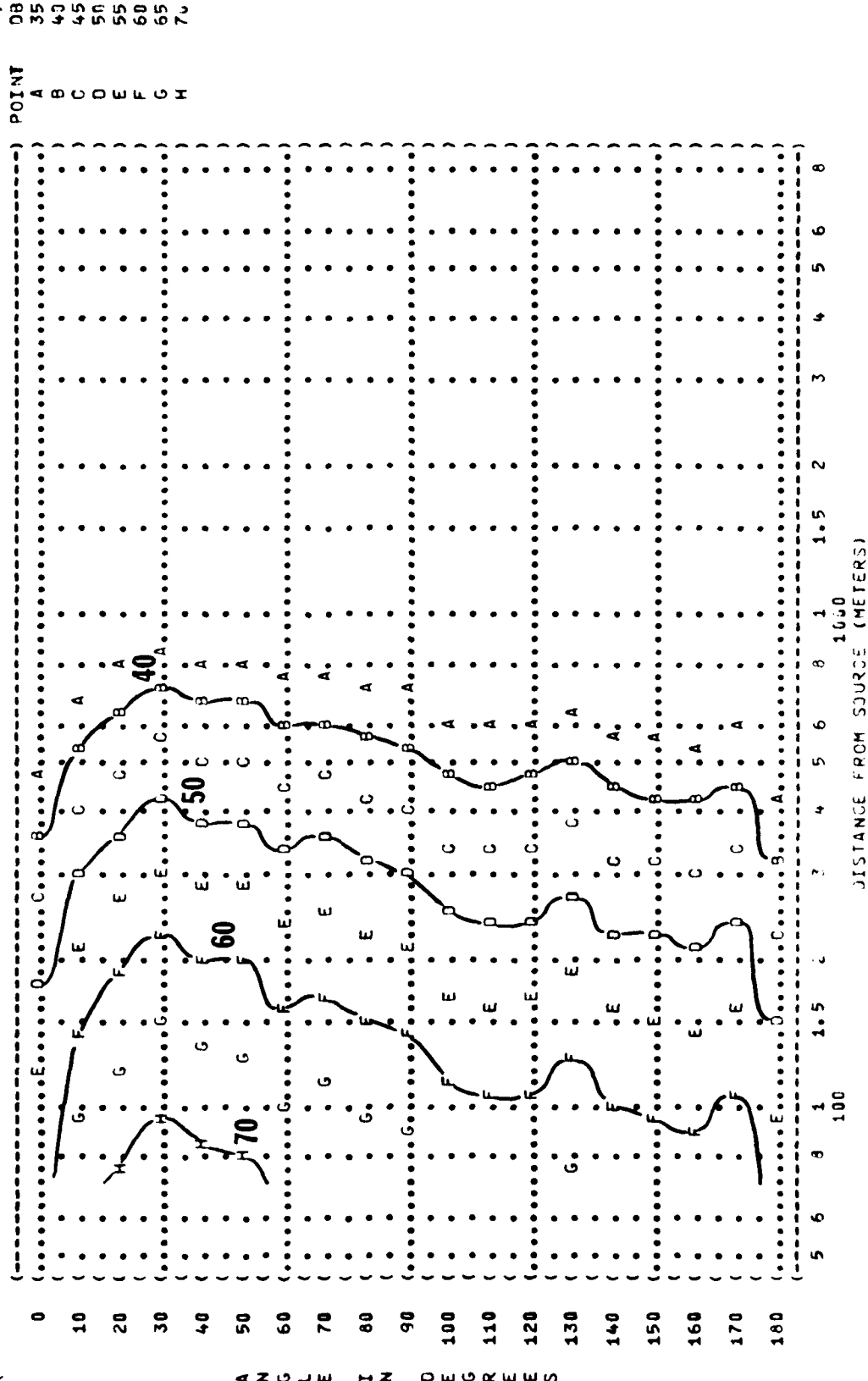
DISTANCE FROM SOURCE (METERS)

PAGE 22



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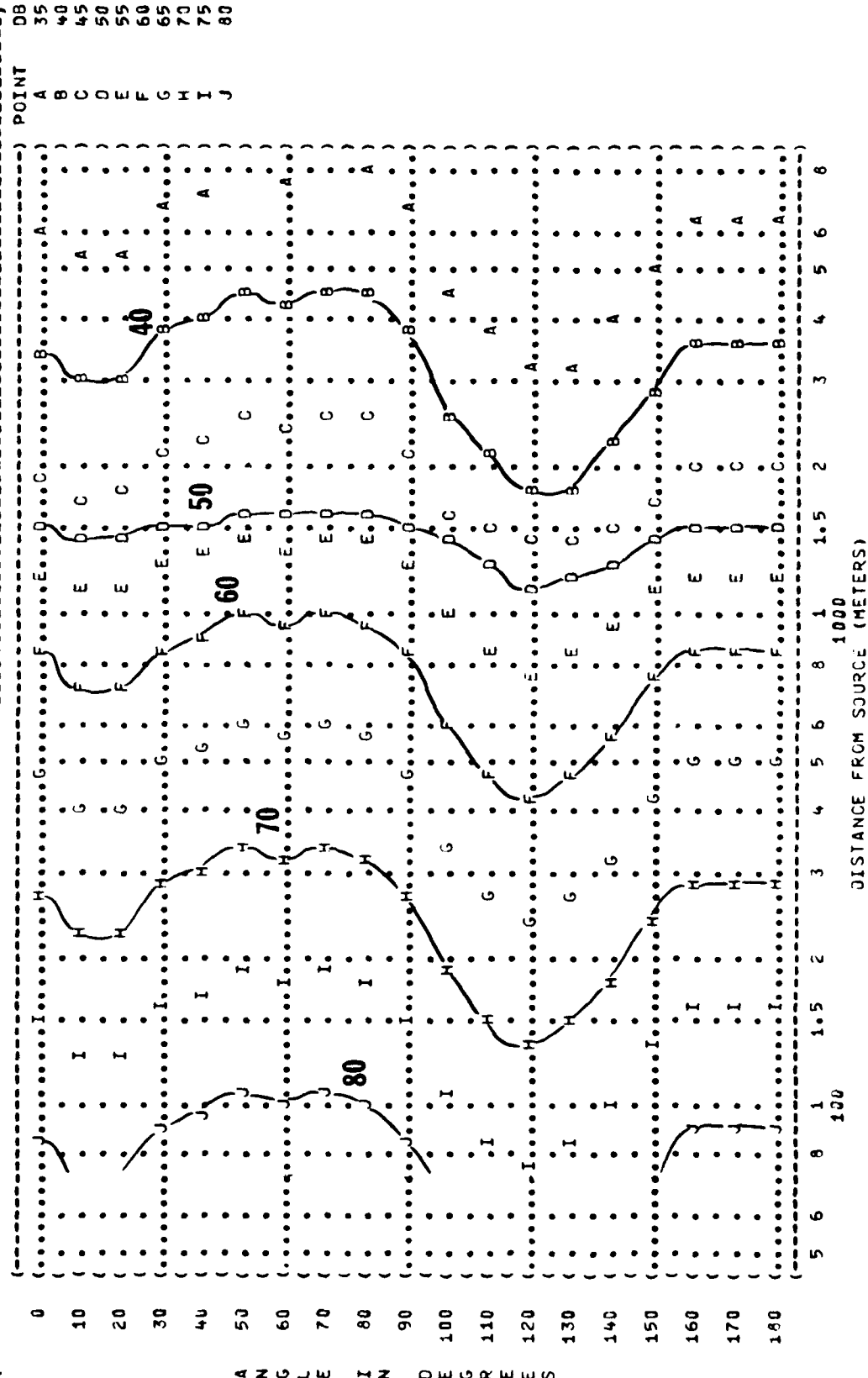
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 (EQUAL LEVEL CONTOURS (CBL)
 (11 4000 HZ OCTAVE BAND
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 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 02
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 (A-70 AIRCRAFT IN THE
 (70% RPM, ENGINE RUNUP
 (AF32A-19 SUPPRESSOR
 (SINGLE ENGINE
 (ENGINE TF41-A-1
 (SUPPRESSED GROUND RUNUP
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 H HG
 (REL HUMID = 70 %
 (PAGE 25



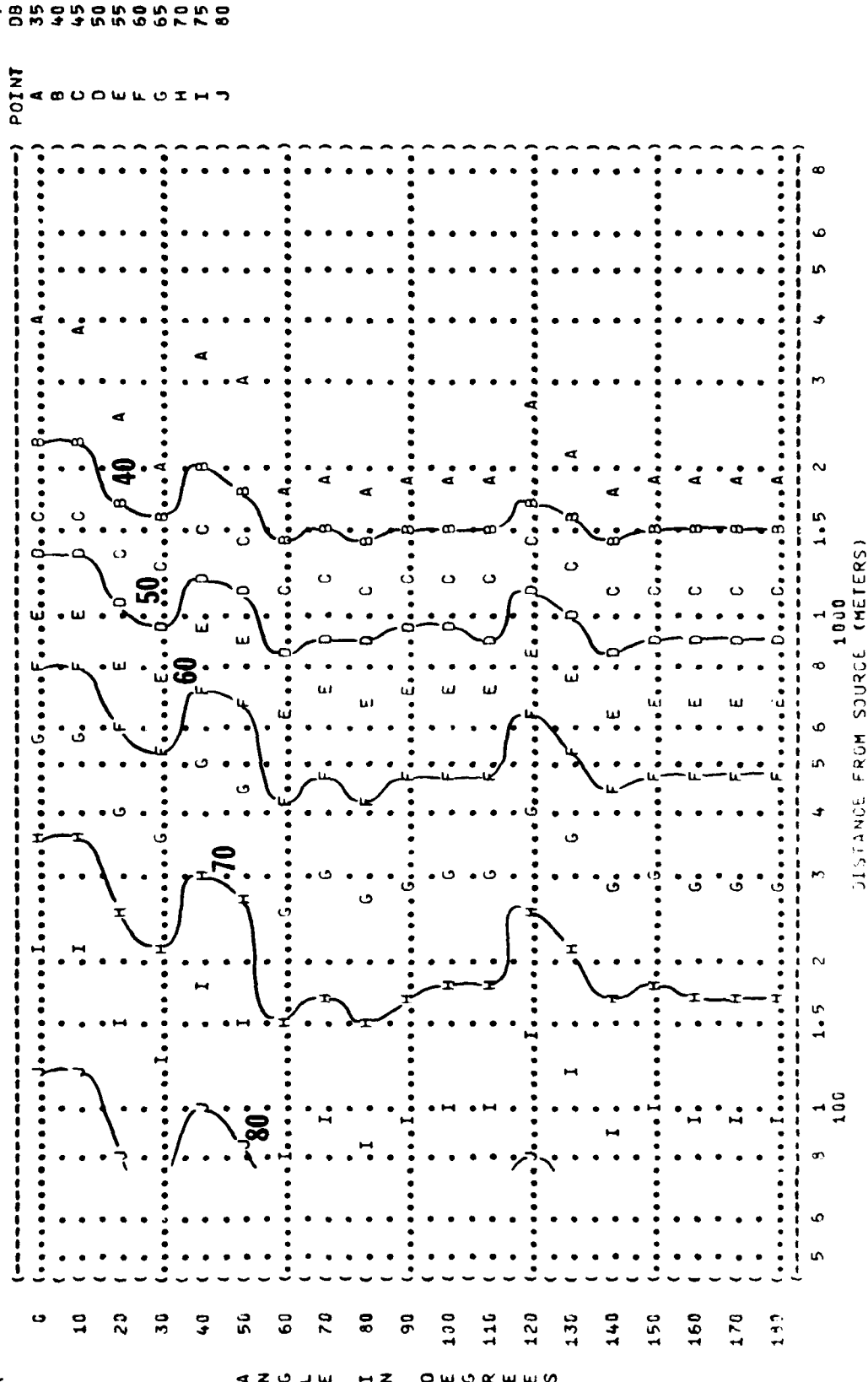
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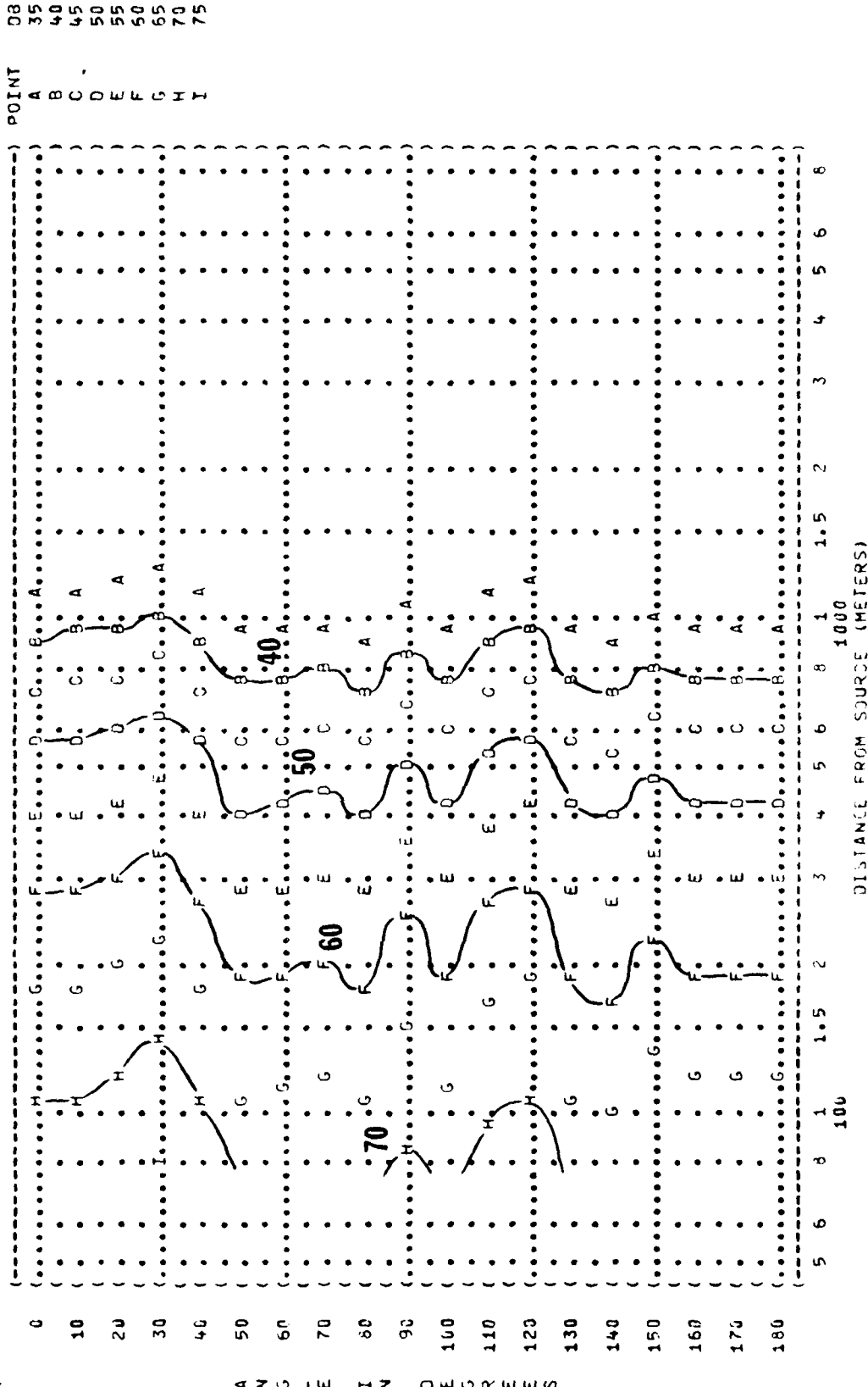
(FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (70% RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 02)
 (20 NOV 79)
 (PAGE 18)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-7 AIRCRAFT IN THE
 (AF32A-24 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR-FIELD NOISE
 (OPERATION:
 (70% RPM
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-001
 (RUN 02
 (20 NOV 79
 (PAGE 19



(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (11) EQUAL LEVEL CONTOURS (DB))
 (125 HZ OCTAVE BAND) OMEGA 1.4)
 () TEST 78-833-001)
 () RUN 02)
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (A-7 AIRCRAFT IN THE) TEMP = 15 C)
 (AF32A-24 SUPPRESSOR) BAR PRESS = .760 M HG)
 (ENGINE TF41-A-1) REL HUMID = 70 %)
 (FAR-FIELD NOISE))
 () PAGE 20)



[illegible]

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (70% RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 02)
 (20 NOV 79)
 (PAGE 22)

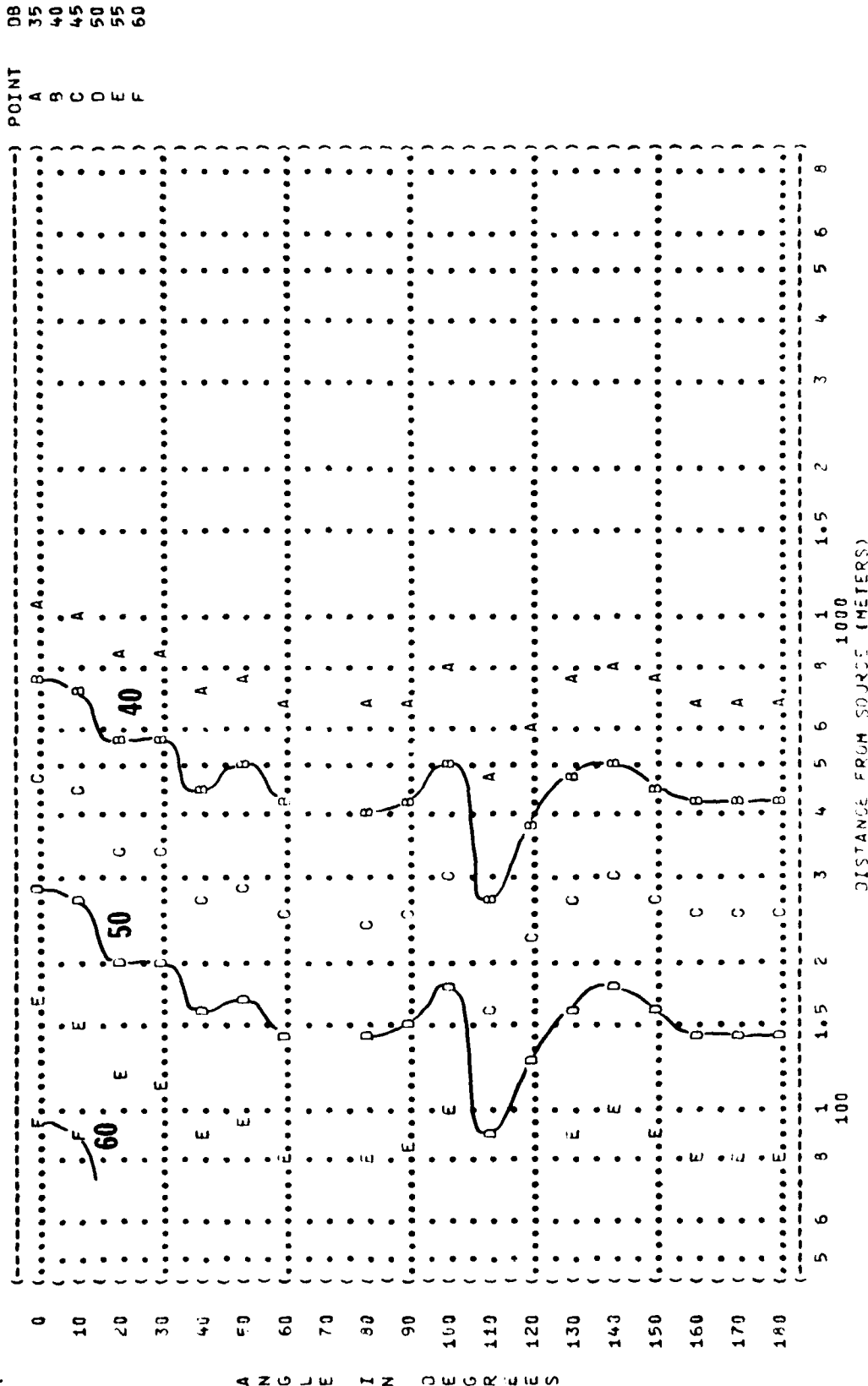


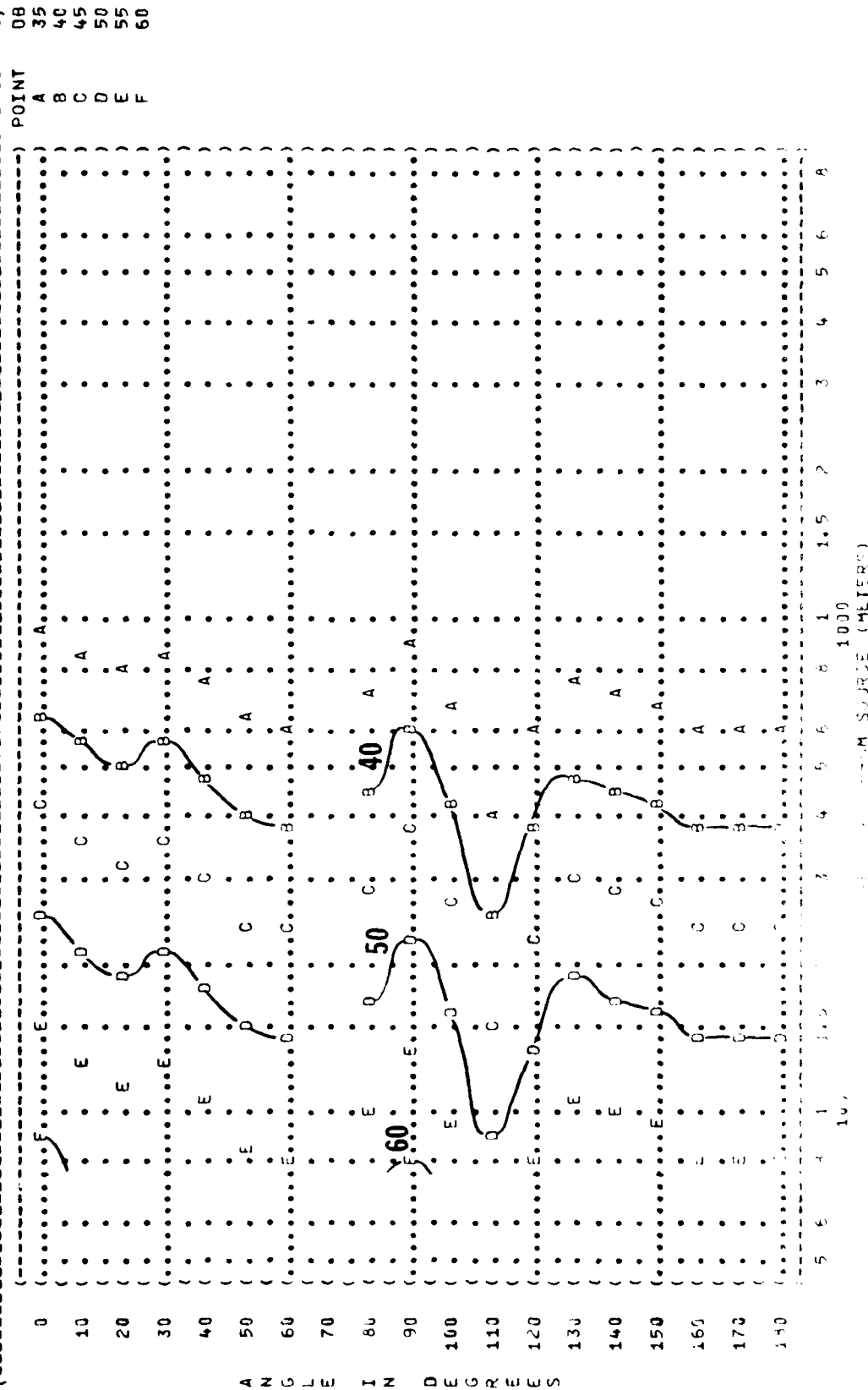
FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
1000 HZ OCTAVE BAND

11

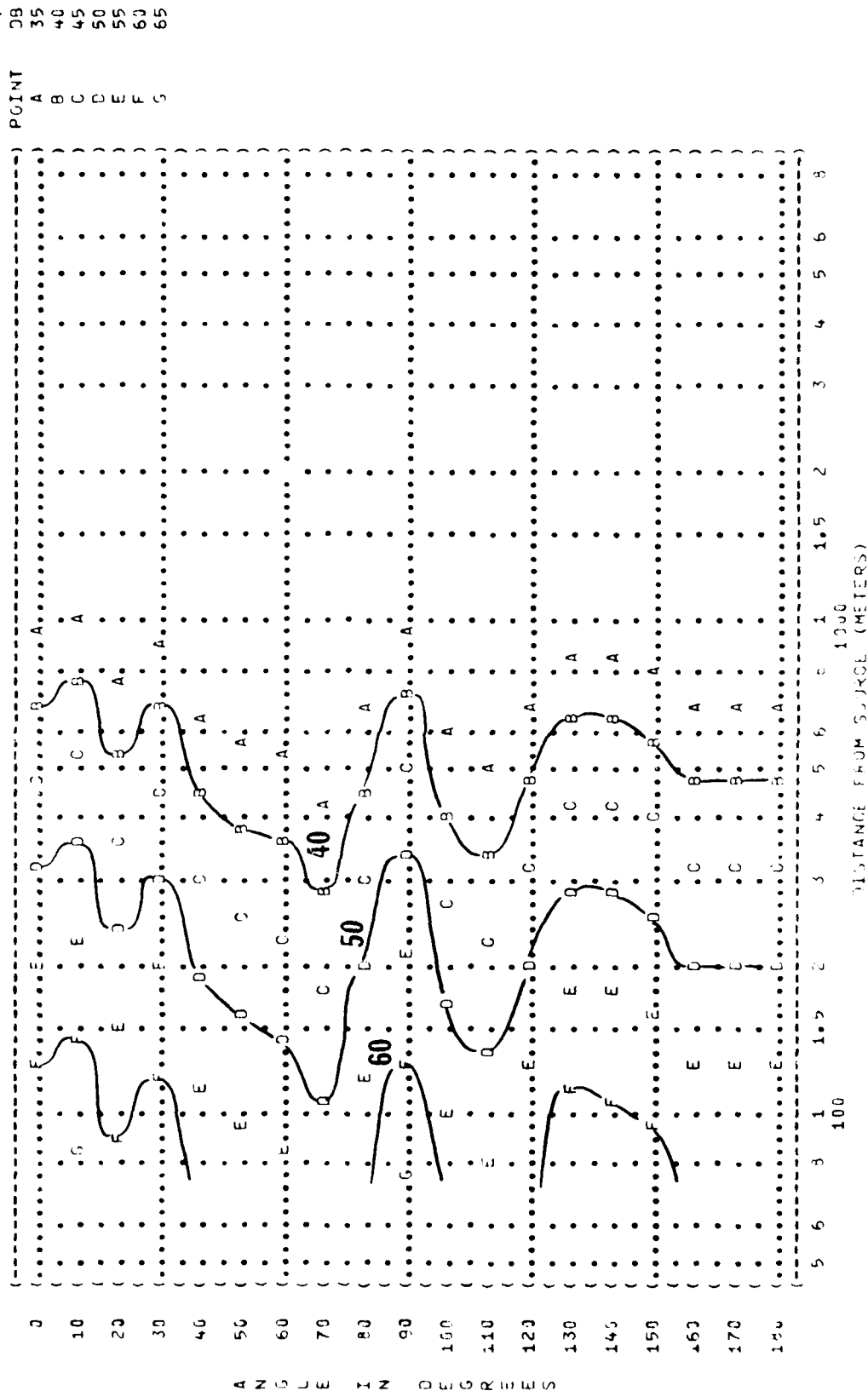
NOISE SOURCE/SUBJECT: (OPERATION:)
A-7 AIRCRAFT IN THE (70% RPM)
AF32A-24 SUPPRESSOR (SINGLE ENGINE)
ENGINE TF41-A-1 (GROUND RUNUP (SUPPRESSED))
FAR-FIELD NOISE ()

METEOROLOGY:)
TEMP = 15 C)
BAR PRESS = .760 M HG)
REL HUMID = 70 %)

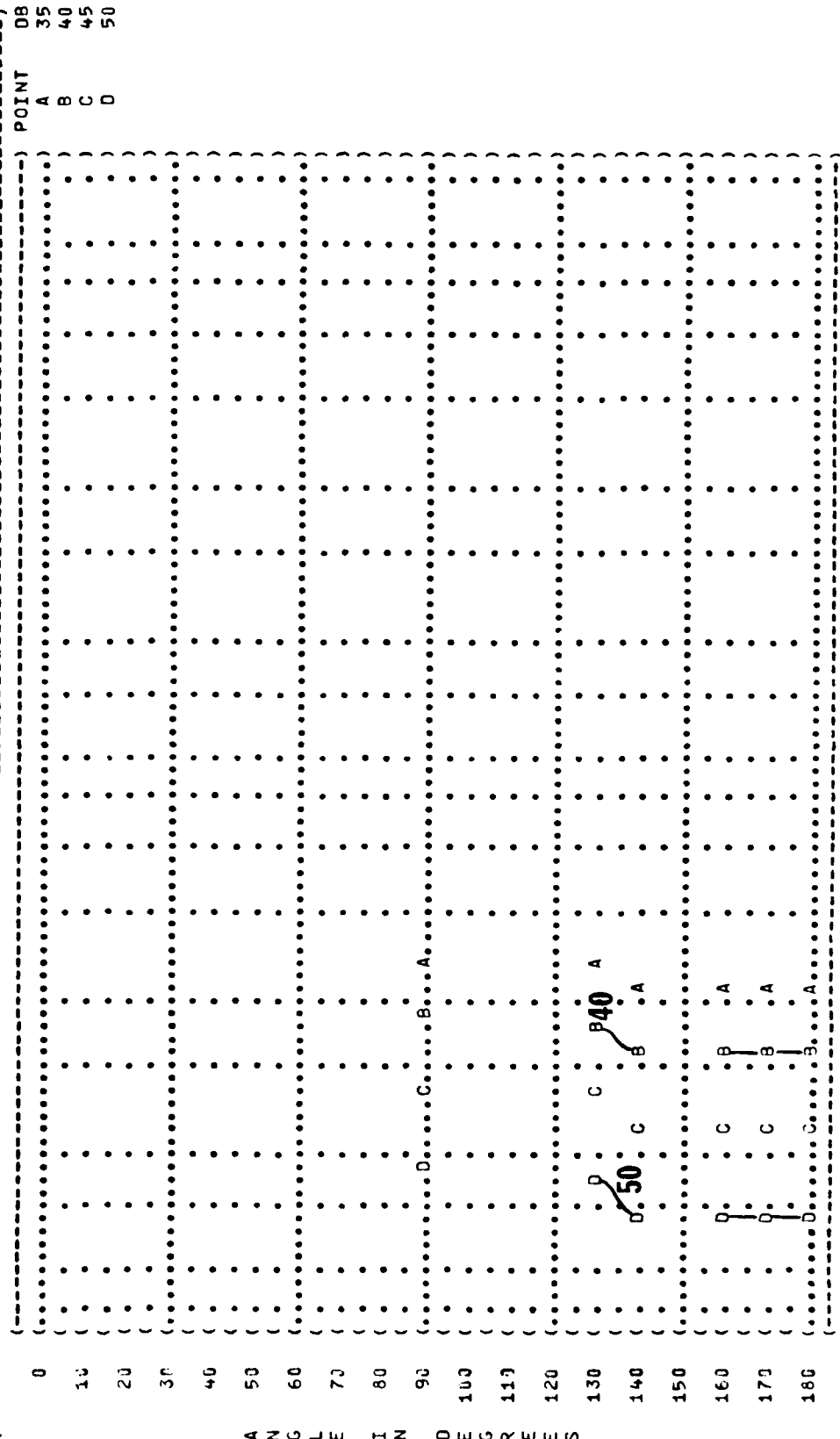
IDENTIFICATION:)
OMEGA 1.4)
TEST 78-833-001)
RUN 02)
PAGE 23)



(FIGURE 11 SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (2000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (70% RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 H HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-101)
 (RUN 02)
 (20 NOV 79)
 (PAGE 24)



((FIGURE: SOUND PRESSURE LEVEL (SPL)
 ((EQUAL LEVEL CONTOURS (DB)
 ((11 8000 HZ OCTAVE BAND
 ((NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (IDENTIFICATION: ()
 ((A-7 AIRCRAFT IN THE (70% RPM (TEMP = 15 C () OMEGA 1.4
 ((AF32A-24 SUPPRESSOR (SINGLE ENGINE (BAR PRESS = .76J M H3 () TEST 78-833-001
 ((ENGINE TF41-A-1 (GROUND RUNUP (SUPPRESSED) (REL HUMID = 70 % () RUN 02
 ((FAR-FIELD NOISE (() PAGE 26 ()



IDENTIFICATION:
OMEGA 1.4

OMEGA 1.4

) METEOROLOGY:
) TEMP
) BAR PRESS
) REL HUMID

```
( ) METEOROLOGY:      = 15 C   H3  

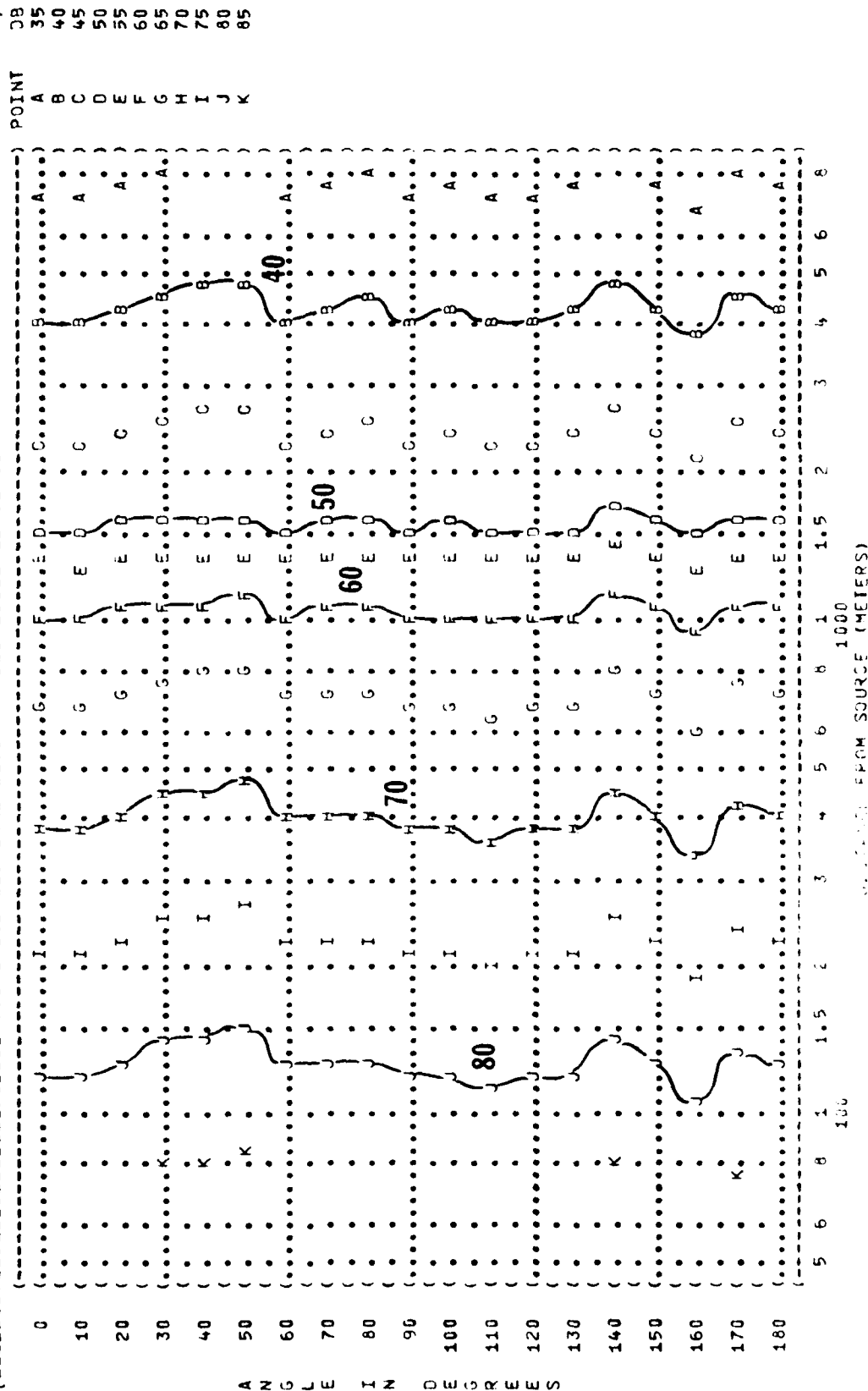
( ) TEMP              = .760 M  

( ) BAR PRESS         = 70 %  

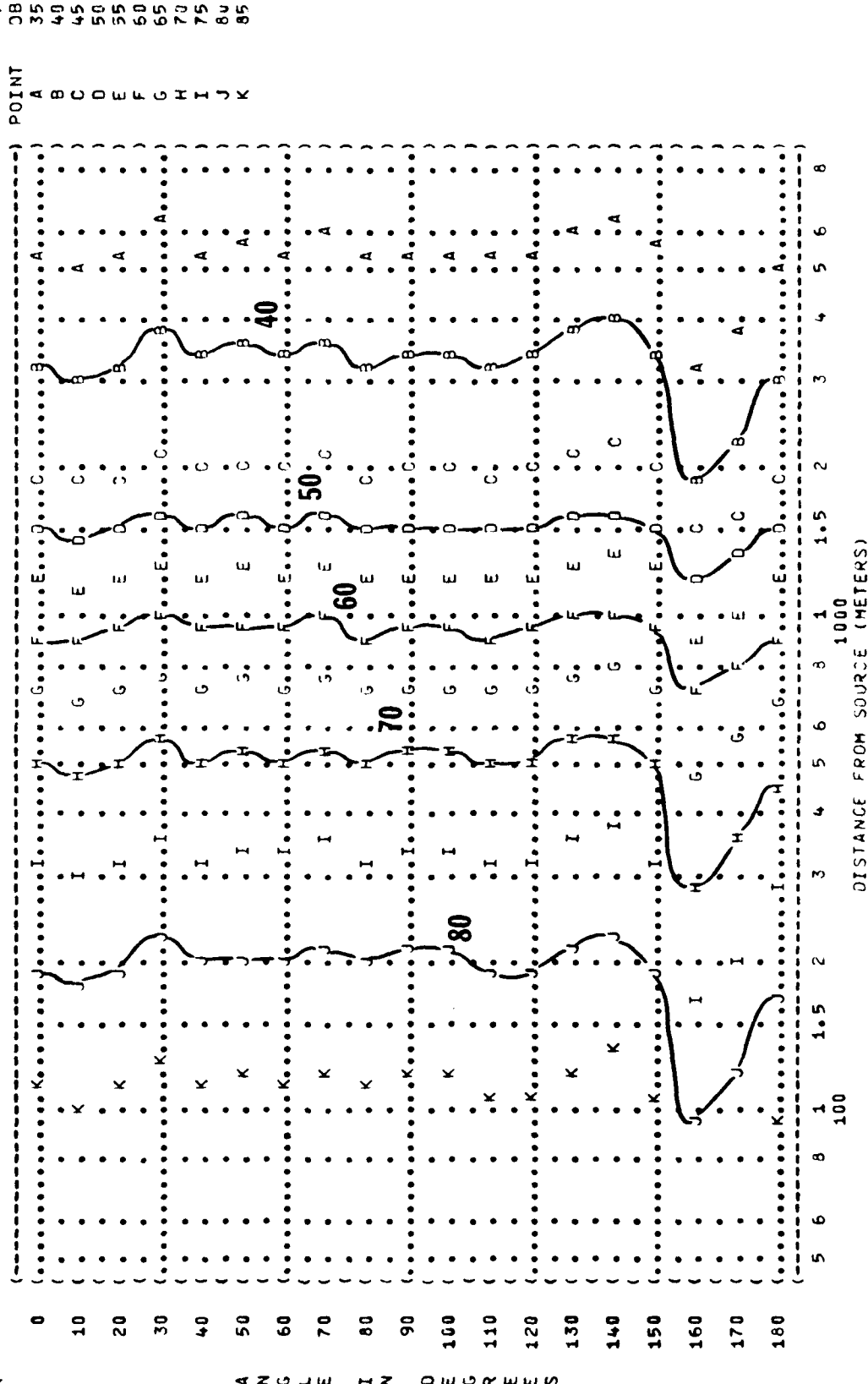
( ) REL HUMID  

( )
```

RUN 03
20 NOV 79
PAGE 18

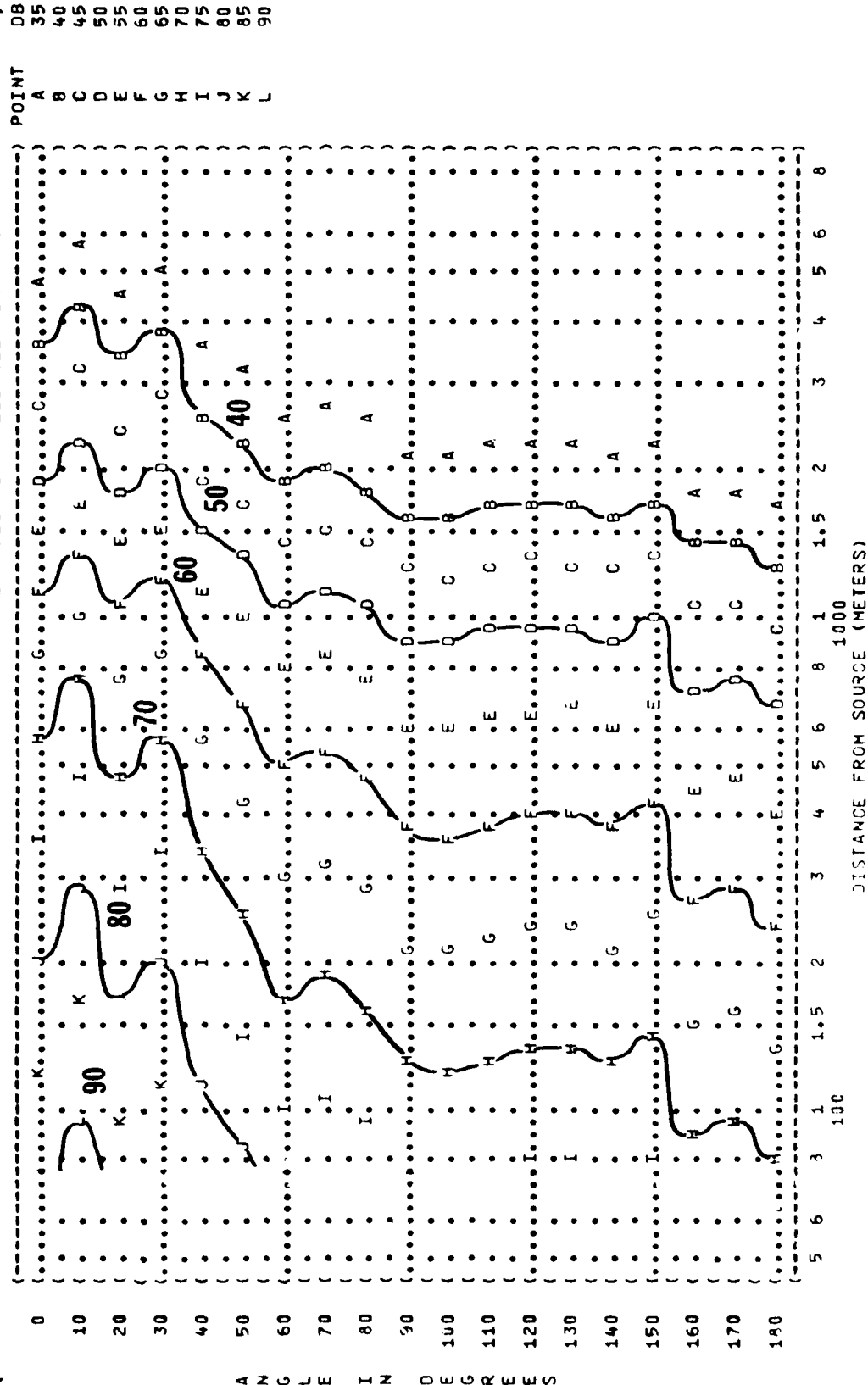


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (CB))
 (11 63 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-70 AIRCRAFT IN THE)
 (AF32A-19 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR FIELD NOISE)
 (OPERATION:)
 (85% RPM, ENGINE RUNUP)
 (SINGLE ENGINE)
 (SUPPRESSED GROUND RUNUP)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-833-001)
 (RUN 03)
 (20 NOV 79)
 (PAGE 19)

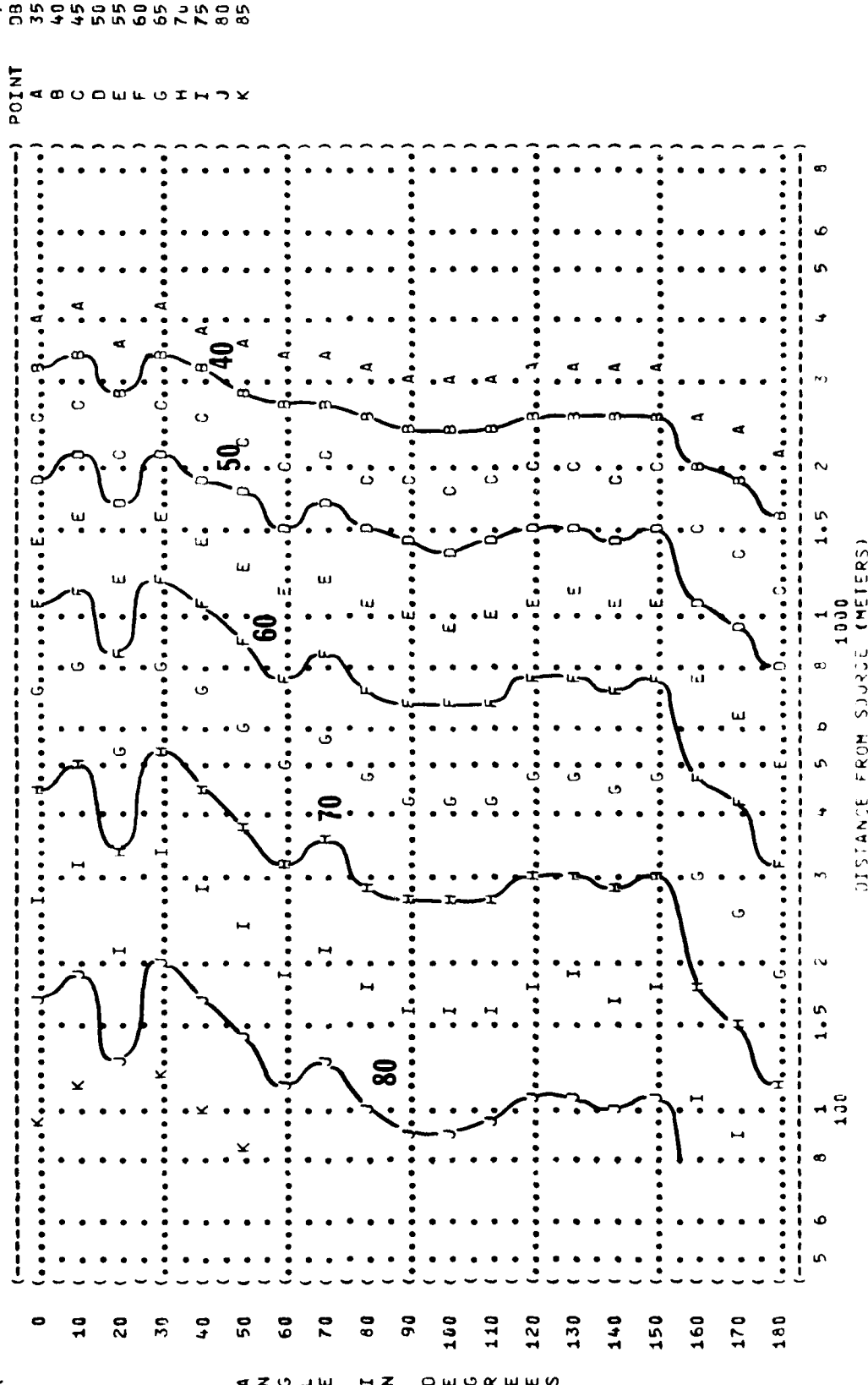


A N G L E I N D E G R E E S

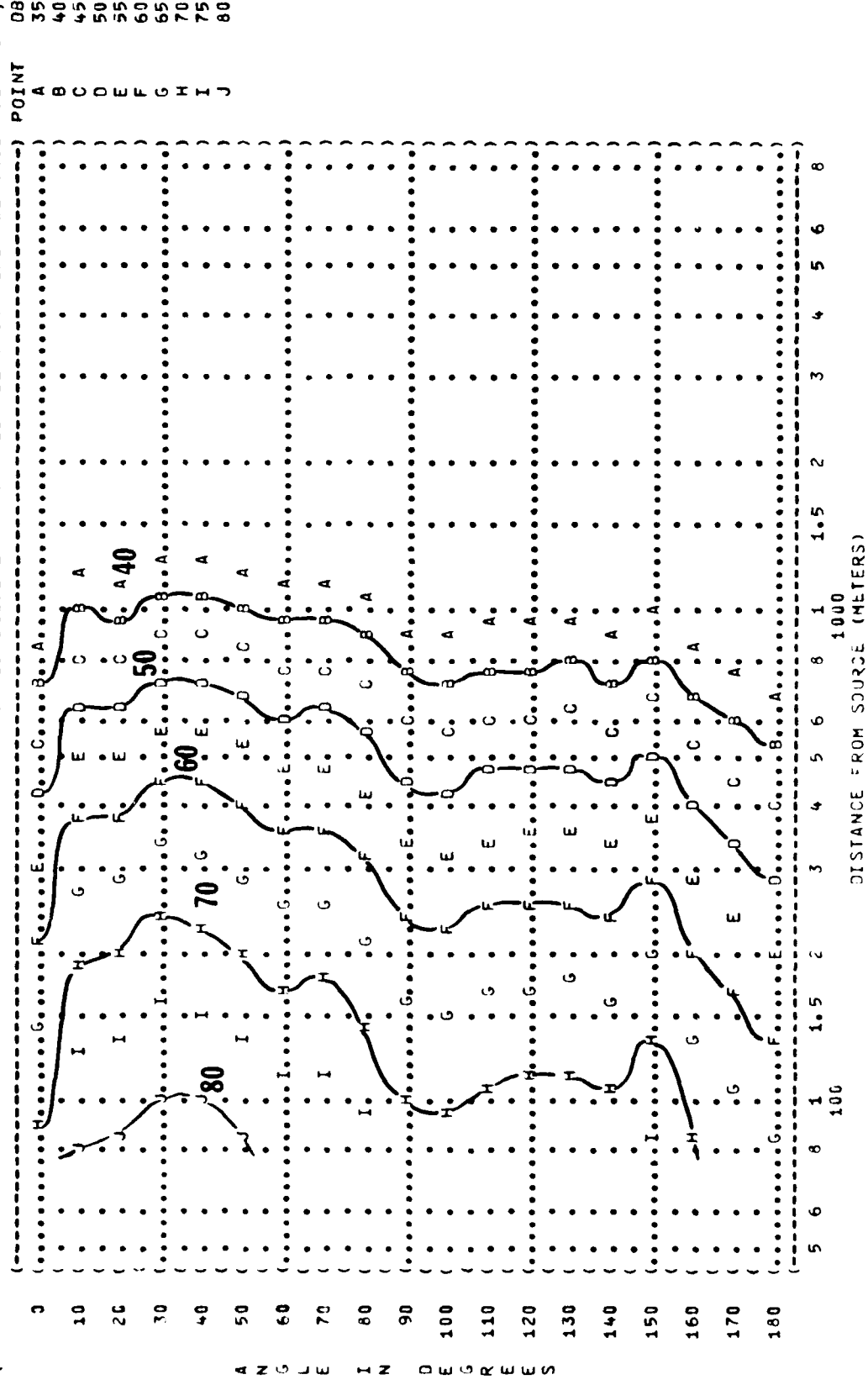
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (500 HZ OCTAVE BAND
 () IDENTIFICATION:
 ()
 () OMEGA 1.4
 () TEST 77-833-001
 () RUN 03
 ()
 (NOISE SOURCE/SUBJECT:
 () OPERATION:
 () 85% RPM, ENGINE RUNUP
 () SINGLE ENGINE
 () AF32A-19 SUPPRESSOR
 () SUPPRESSED GROUND RUNUP
 () ENGINE TF41-A-1
 () FAR FIELD NOISE
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 22



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 1000 HZ OCTAVE BAND
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 03
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 (A-70 AIRCRAFT IN THE
 (85% RPM, ENGINE RUNUP
 (TEMP = 15 C
 (AF32A-19 SUPPRESSOR
 (SINGLE ENGINE
 (BAR PRESS = .760 M HG
 (ENGINE IF41-A-1
 (SUPPRESSED GROUND RUNUP
 (REL HUMID = 70 %
 (FAR FIELD NOISE
 (PAGE 23



(FIGURE SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (dB)
 (11 4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-70 AIRCRAFT IN THE
 (AF32A-19 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR FIELD NOISE
 (OPERATION:
 (85% RPM, ENGINE RUNUP
 (SINGLE ENGINE
 (SUPPRESSED GROUND RUNUP
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 03
 (20 NOV 79
 (PAGE 25



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 8000 HZ OCTAVE BAND
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 03
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 (A-70 AIRCRAFT IN THE
 (85% RPM, ENGINE RUNUP
 (AF32A-19 SUPPRESSOR
 (SINGLE ENGINE
 (ENGINE TF41-A-1
 (SUPPRESSED GROUND RUNUP
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 26

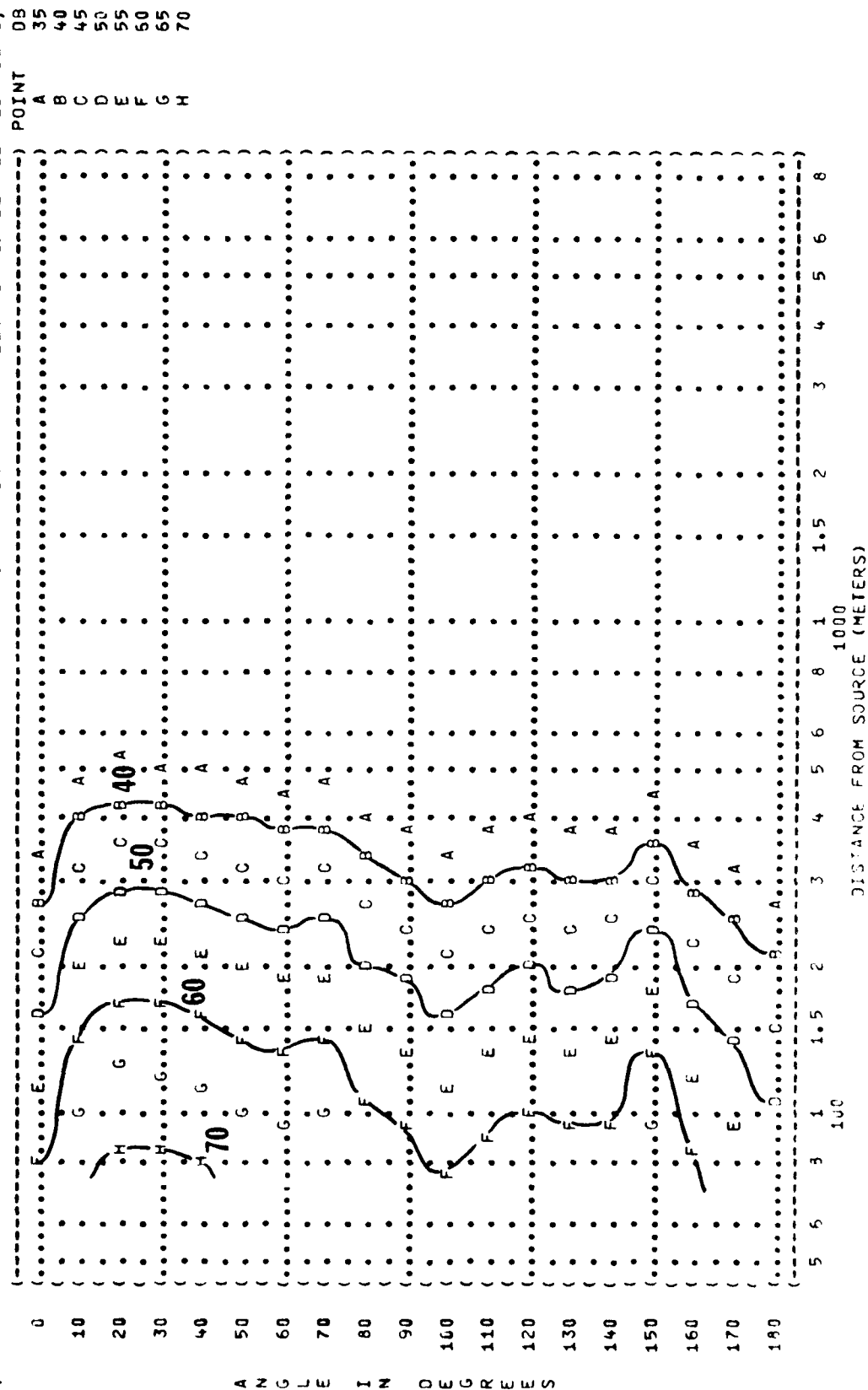
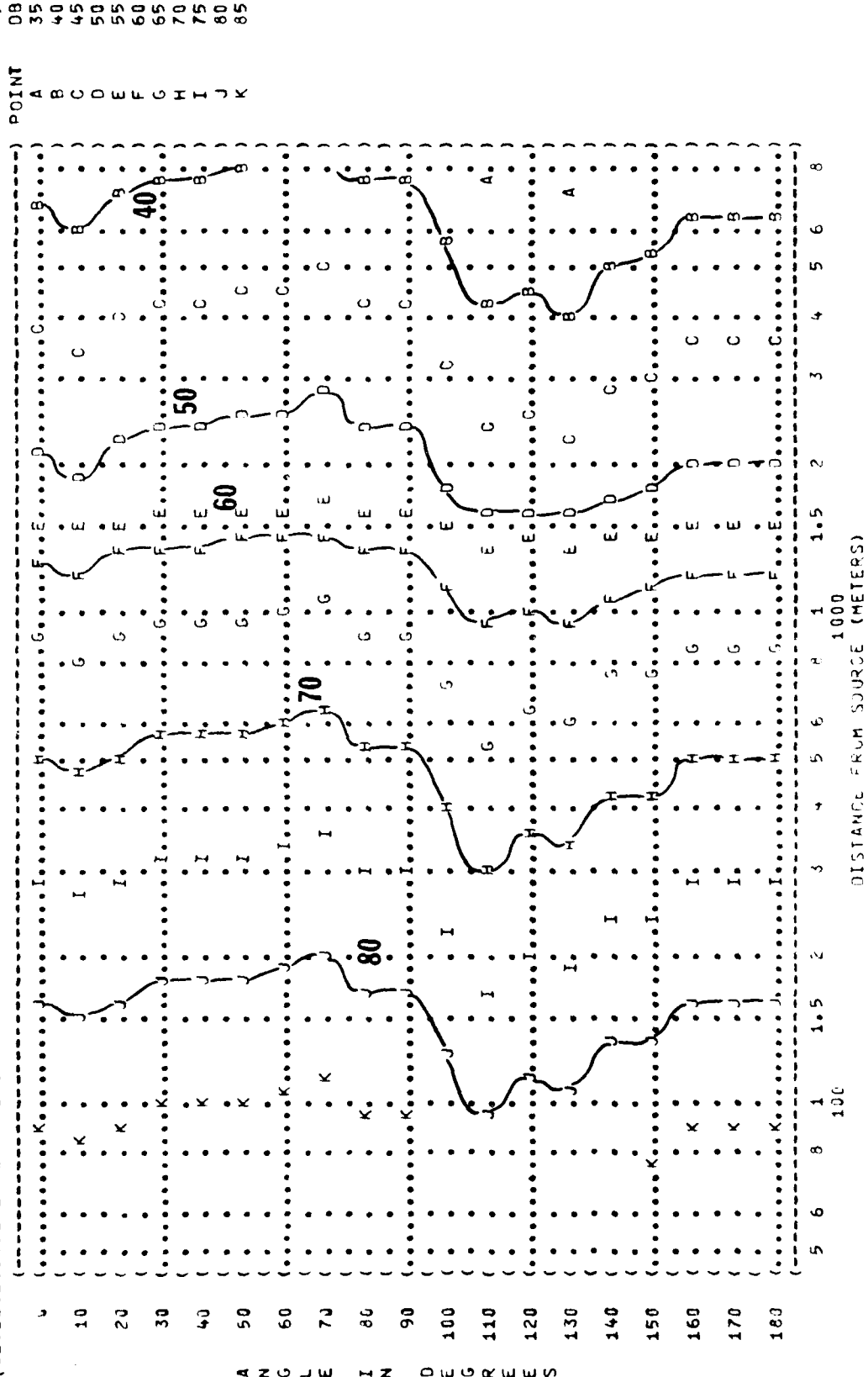
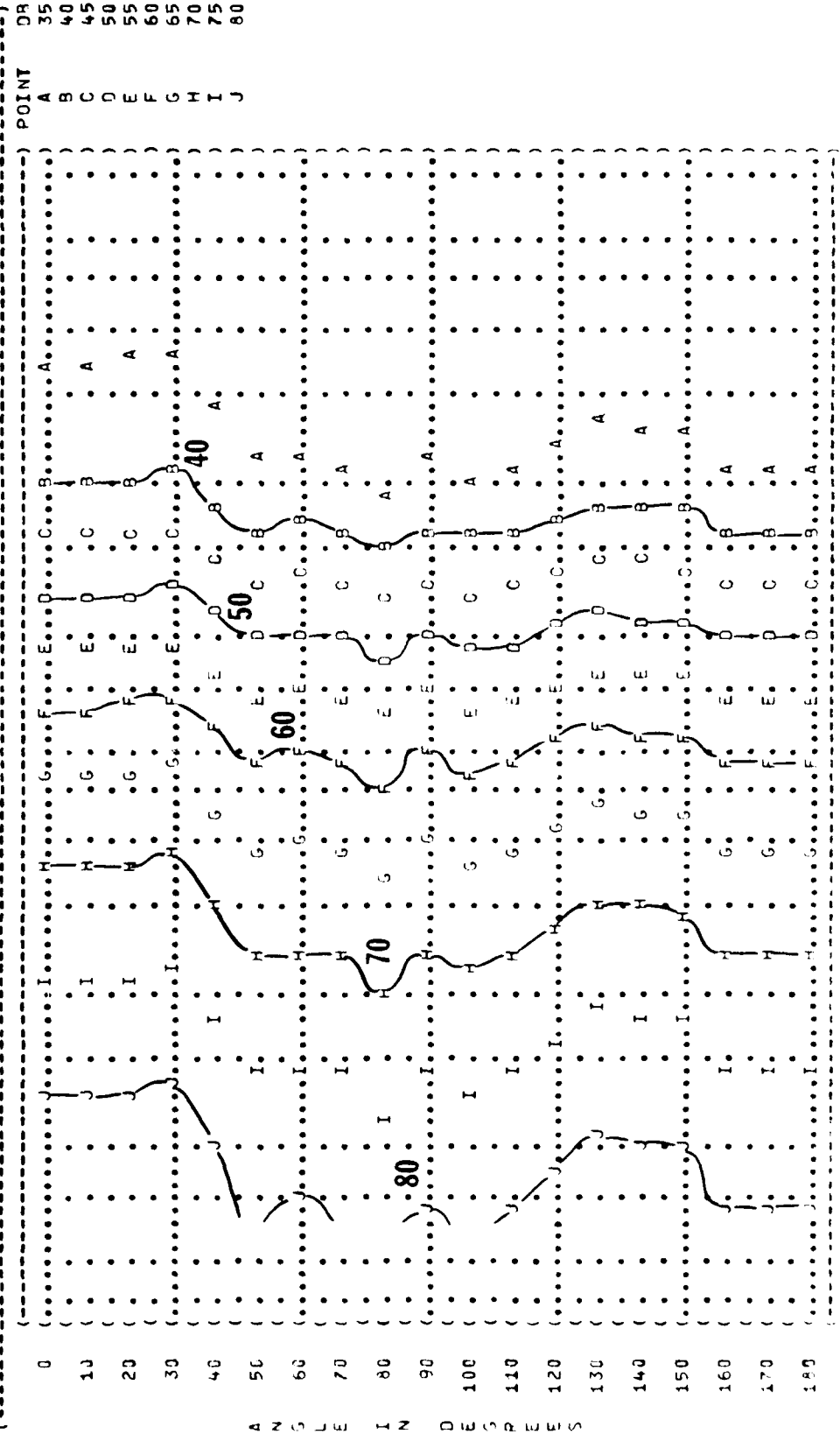


FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 EQUAL LEVEL CONTOURS (CB)
 11 31.5 HZ OCTAVE BAND
 NOISE SOURCE/SUBJECT:
 A-7 AIRCRAFT IN THE
 AF32A-24 SUPPRESSOR
 ENGINE TF41-A-1
 FAR-FIELD NOISE
 (OPERATION: 85.6% RPM
 SINGLE ENGINE
 GROUND RUNUP (SUPPRESSED))
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 IDENTIFICATION:
 OMEGA 1.4
 TEST 78-833-001
 RUN 03
 20 NOV 79
 PAGE 18



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (63 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (85.6% RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 03)
 (20 NOV 79)
 (PAGE 19)



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) IDENTIFICATION: )
) )
) OMEGA 1.4 )
) TEST 78-823-101 )

```

5

METEOROLOGY:
TEMP
BAR PRESS
REL HUMID

TEOROLOGY: = 15 C
TEMP = .760 M HG
BAR PRESS = 70 %
REL HUMID

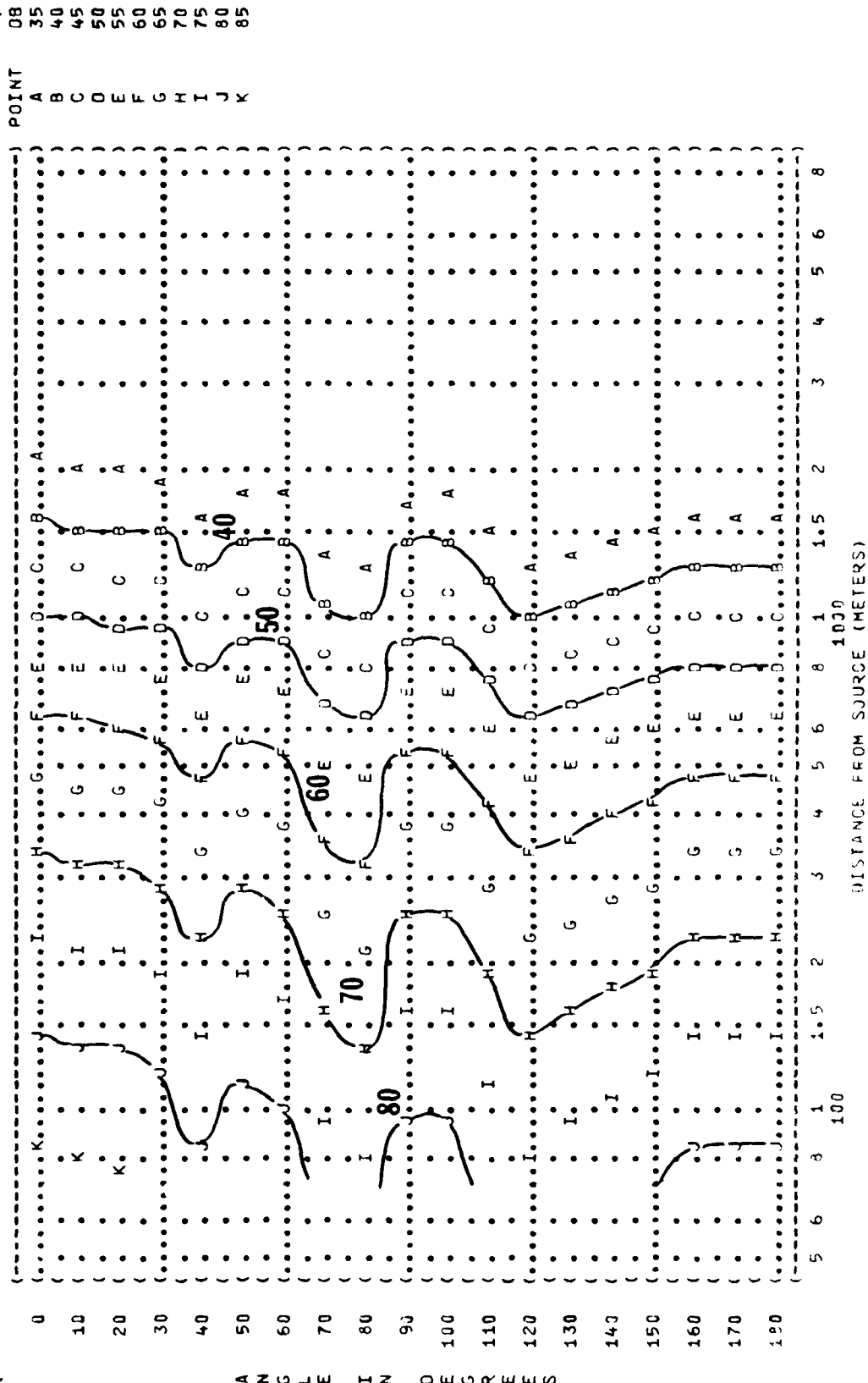
PAGE 20



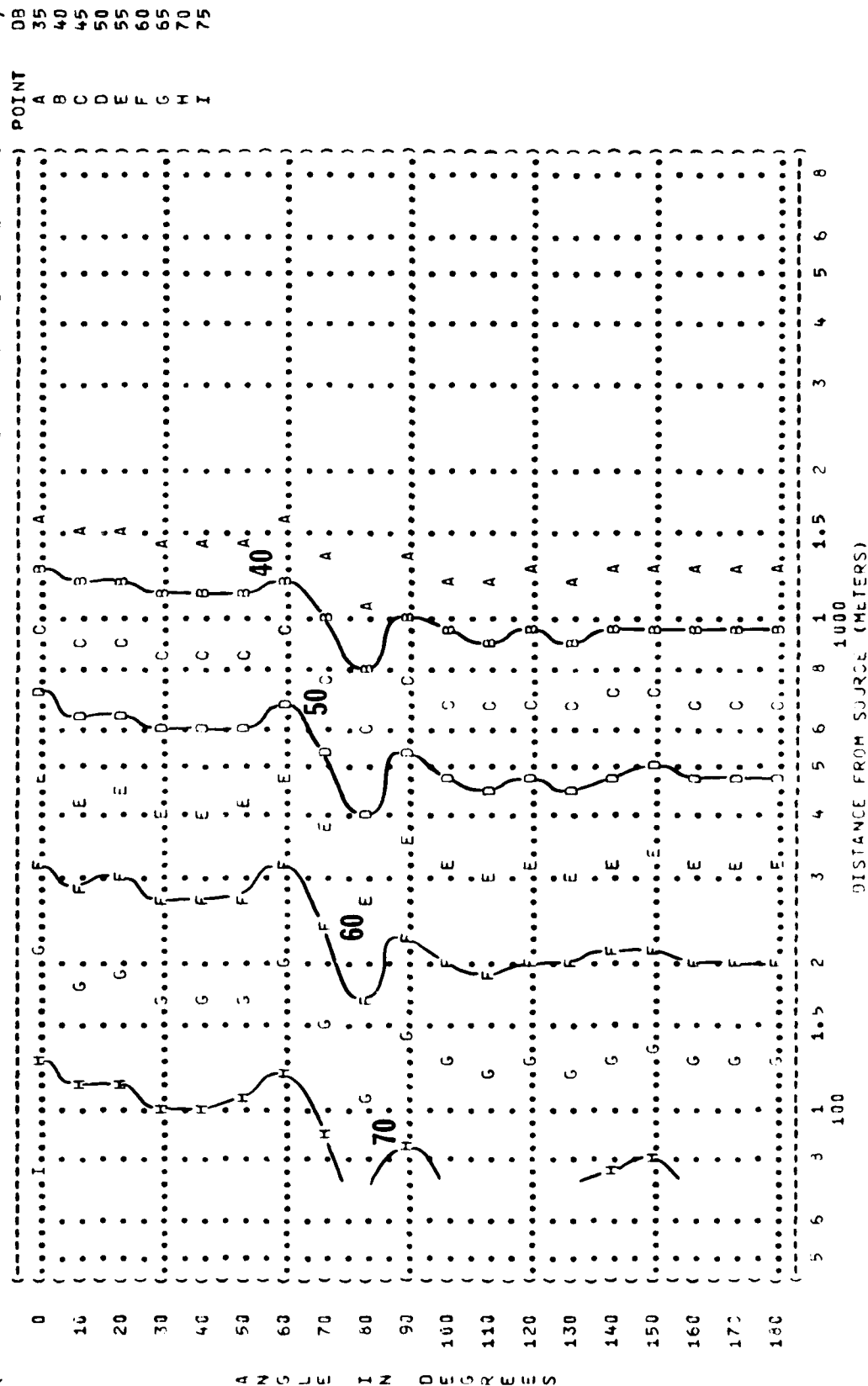
FIGURE 11

| | SOUND PRESSURE LEVEL (SPL) | IDENTIFICATION: |
|-----|----------------------------|-----------------|
| () | EQUAL LEVEL CONTOURS (DB) | () |
| () | 250 HZ OCTAVE BAND | () OMEGA 1.4 |

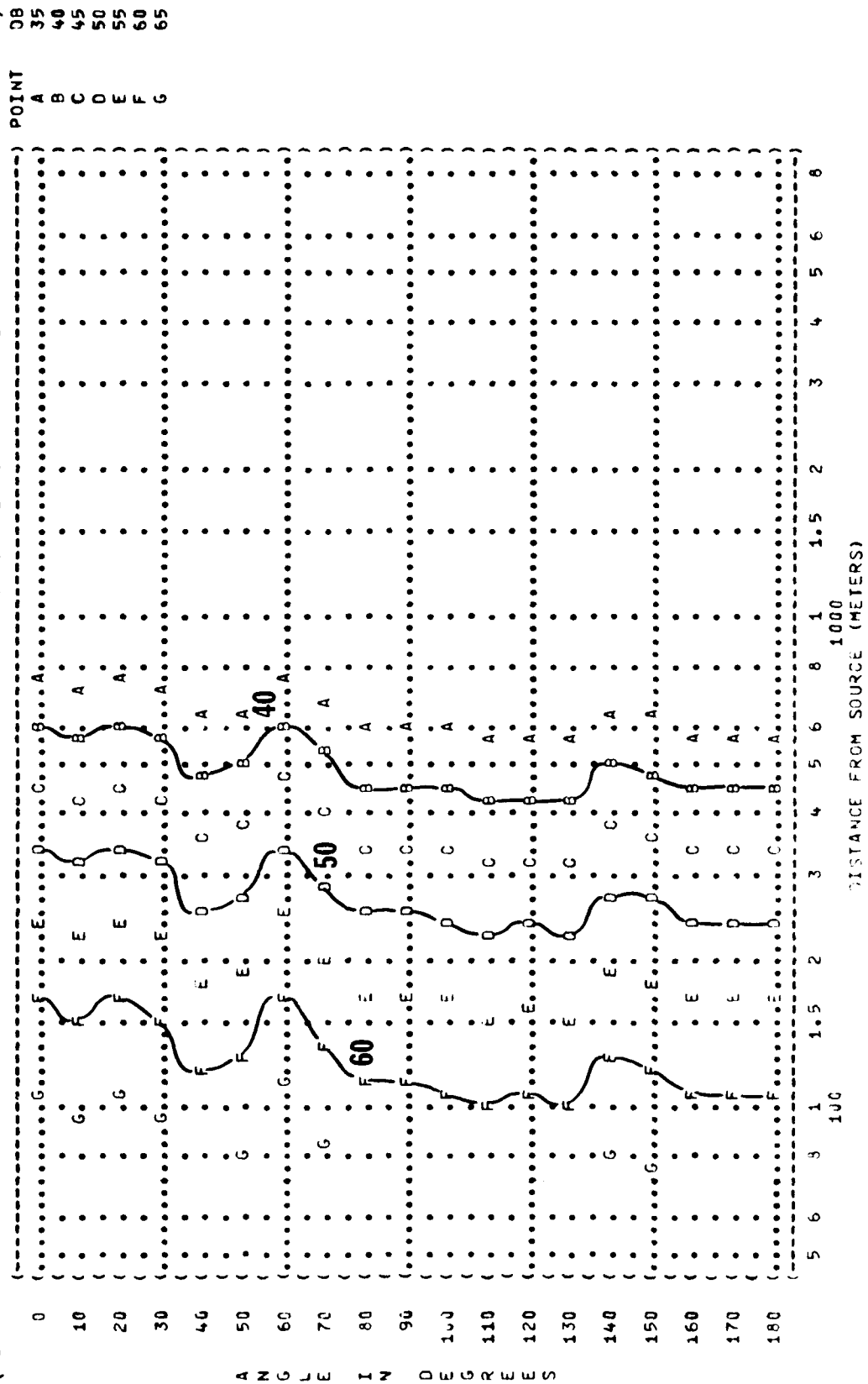
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( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 03
( A-7 AIRCRAFT IN THE ) TEMP = 15 C )
( AF32A-24 SUPPRESSOR ) SINGLE ENGINE ) BAR PRESS = .760 H HG )
( ENGINE TF41-A-1 ) GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( FAR-FIELD NOISE ) ) PAGE 21
```



(FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (C3)
 (2000 HZ OCTAVE BAND
 (11
 (NOISE SOURCE/SUBJECT:
 (A-7 AIRCRAFT IN THE
 (AF32A-24 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR-FIELD NOISE
 (OPERATION:
 (85.6% RPM
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M H3
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-301
 (RUN 03
 (20 NOV 79
 (PAGE 24



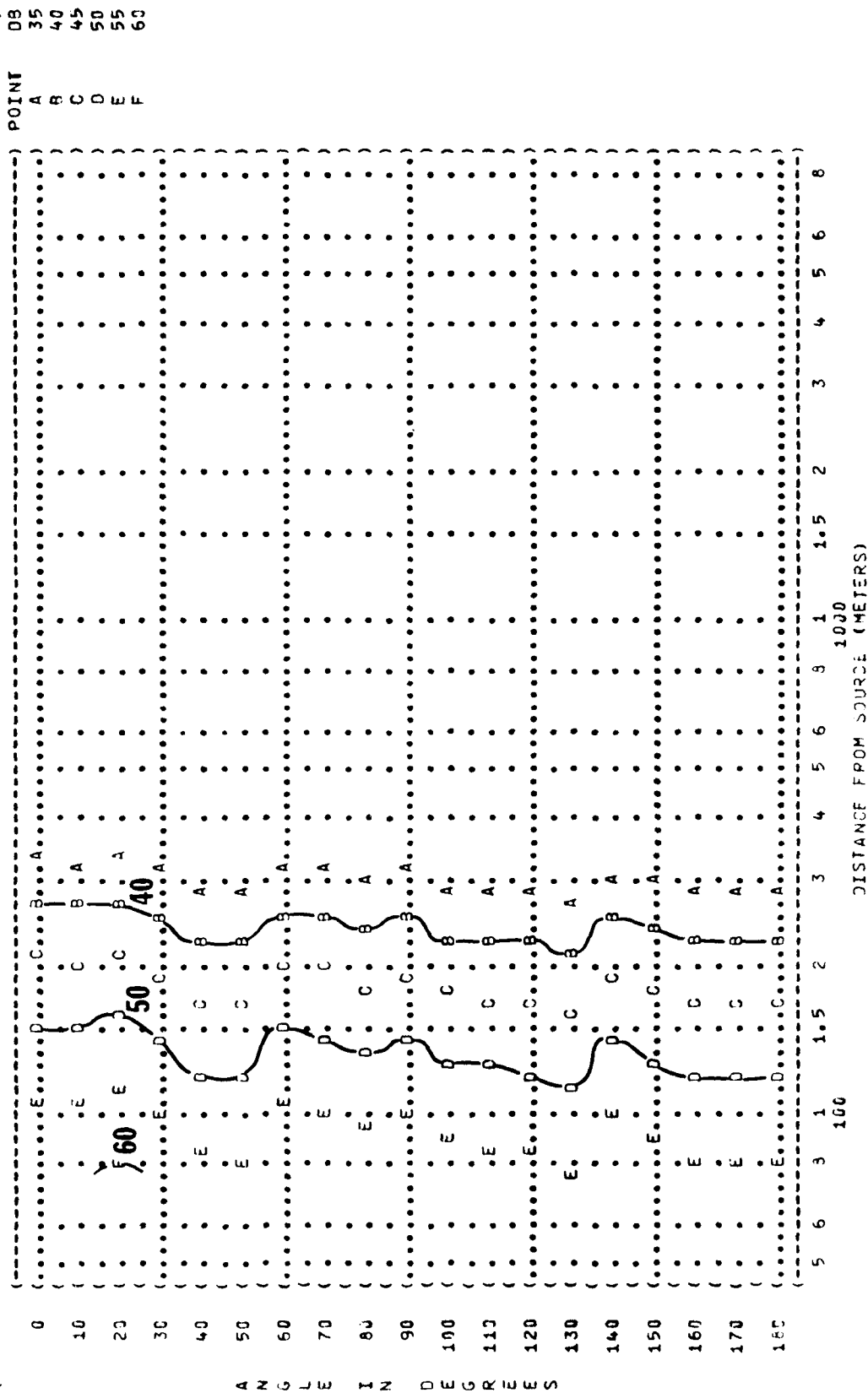
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (A-7 AIRCRAFT IN THE (85.6% RPM
 (AF32A-24 SUPPRESSOR (SINGLE ENGINE
 (ENGINE TF41-A-1 (GROUND RUNUP (SUPPRESSED)
 (FAR-FIELD NOISE ((REL HUMID = 70 %
 ((TEMP = 15 C
 ((BAR PRESS = .760 M HG
 ((20 NOV 79
 ((PAGE 25
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 78-833-001
 (RUN 03



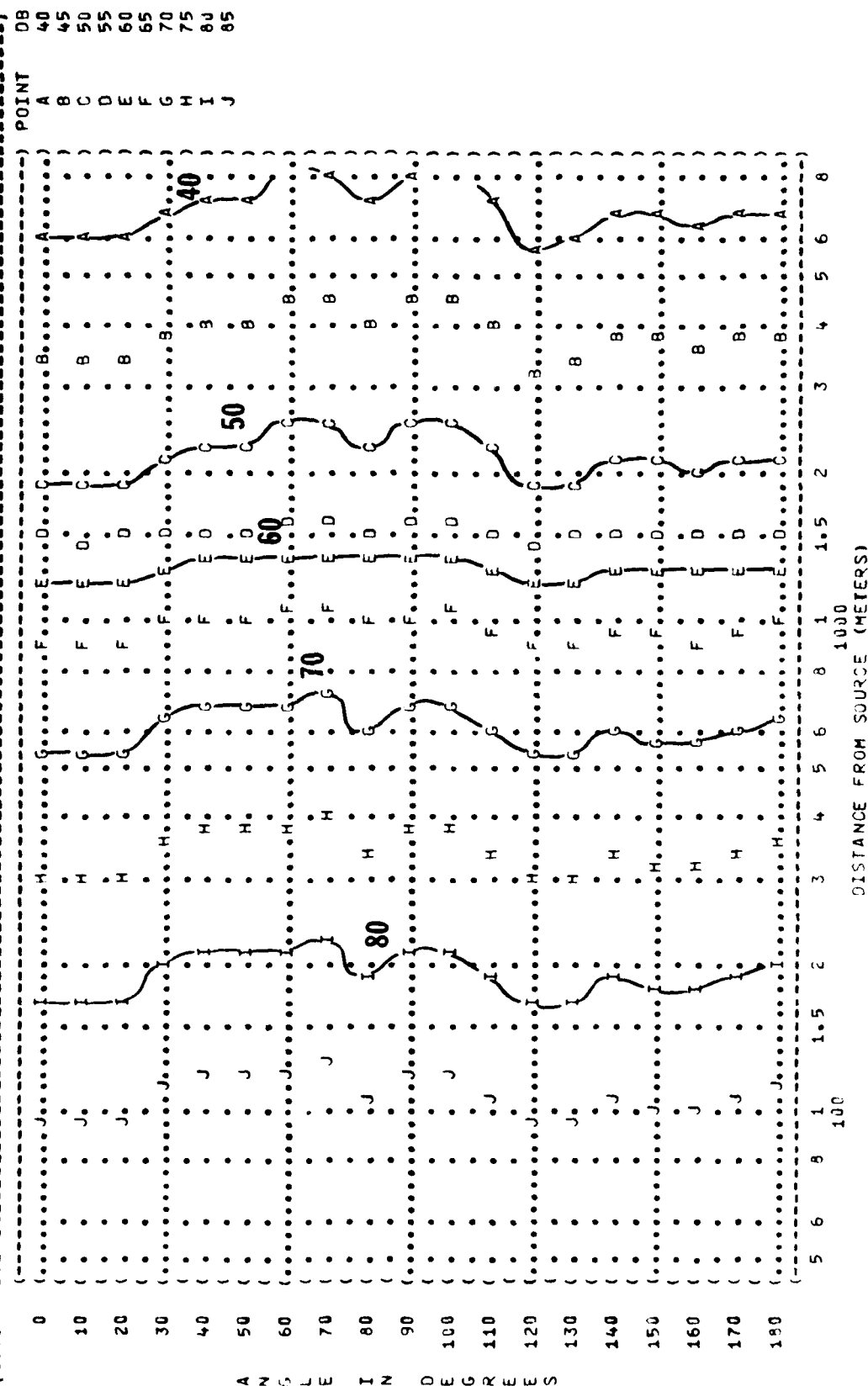
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(-----)
(  FIGURE 1  SOUND PRESSURE LEVEL (SEL)  ) IDENTIFICATION: )
(  EQUAL LEVEL CONTOURS (LB)  ) )
(  11  ) )
(  2000 HZ OCTAVE BAND  ) )
(-----)
(  NOISE SOURCE/SUBJECT:  ) METEOROLOGY: )
(  A-7 AIRCRAFT IN THE  ) TEMP = 15 C )
(  AF32A-24 SUPPRESSOR  ) SINGLE ENGINE  ) BAR PRESS = 760 M HG )
(  ENGINE TF41-A-1  ) GROUND RUNUP (SUPPRESS=0)  ) REL HUMID = 70 % )
(  FAR-FIELD NOISE  ) ) ) PAGE 26 )
(-----)

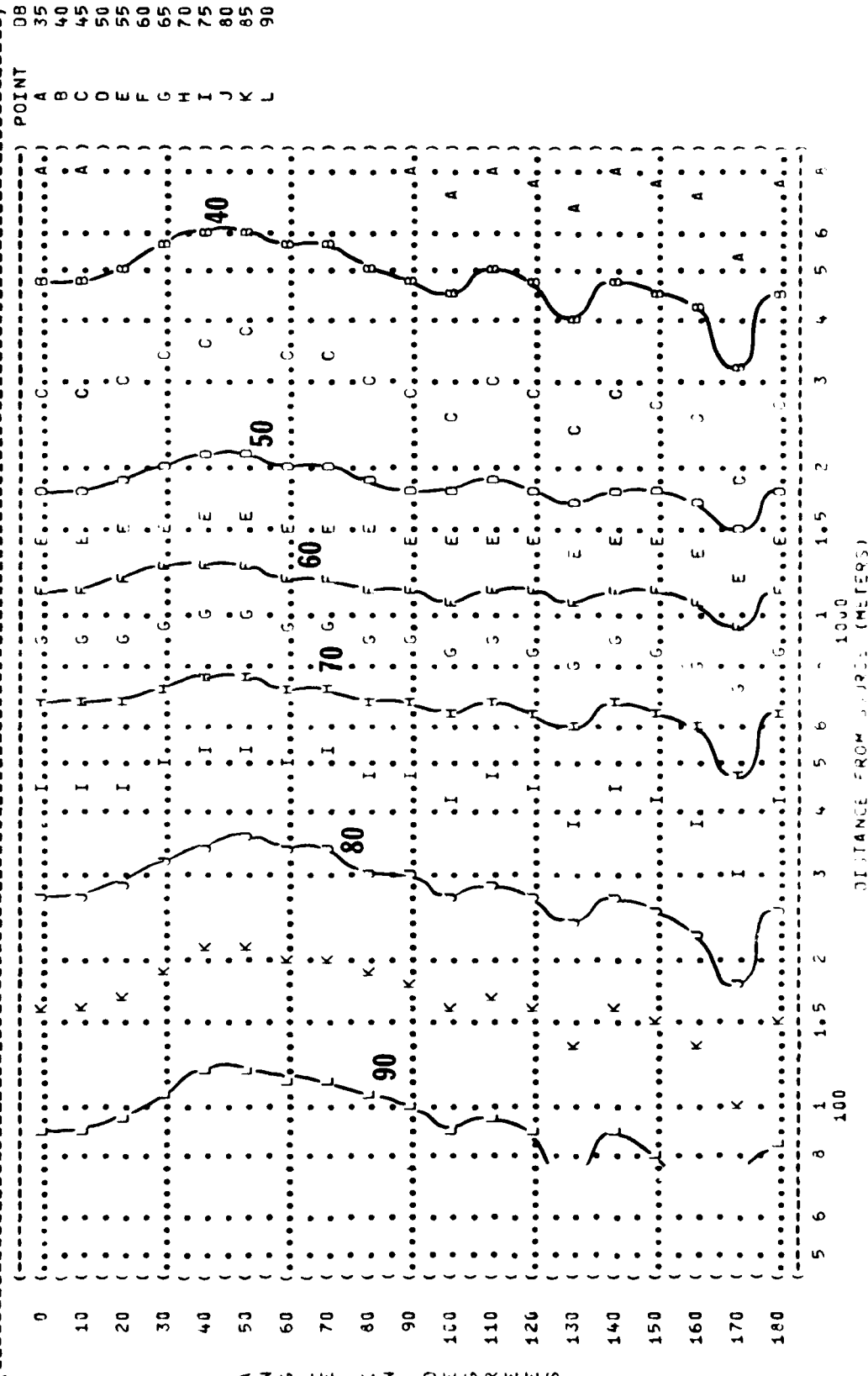
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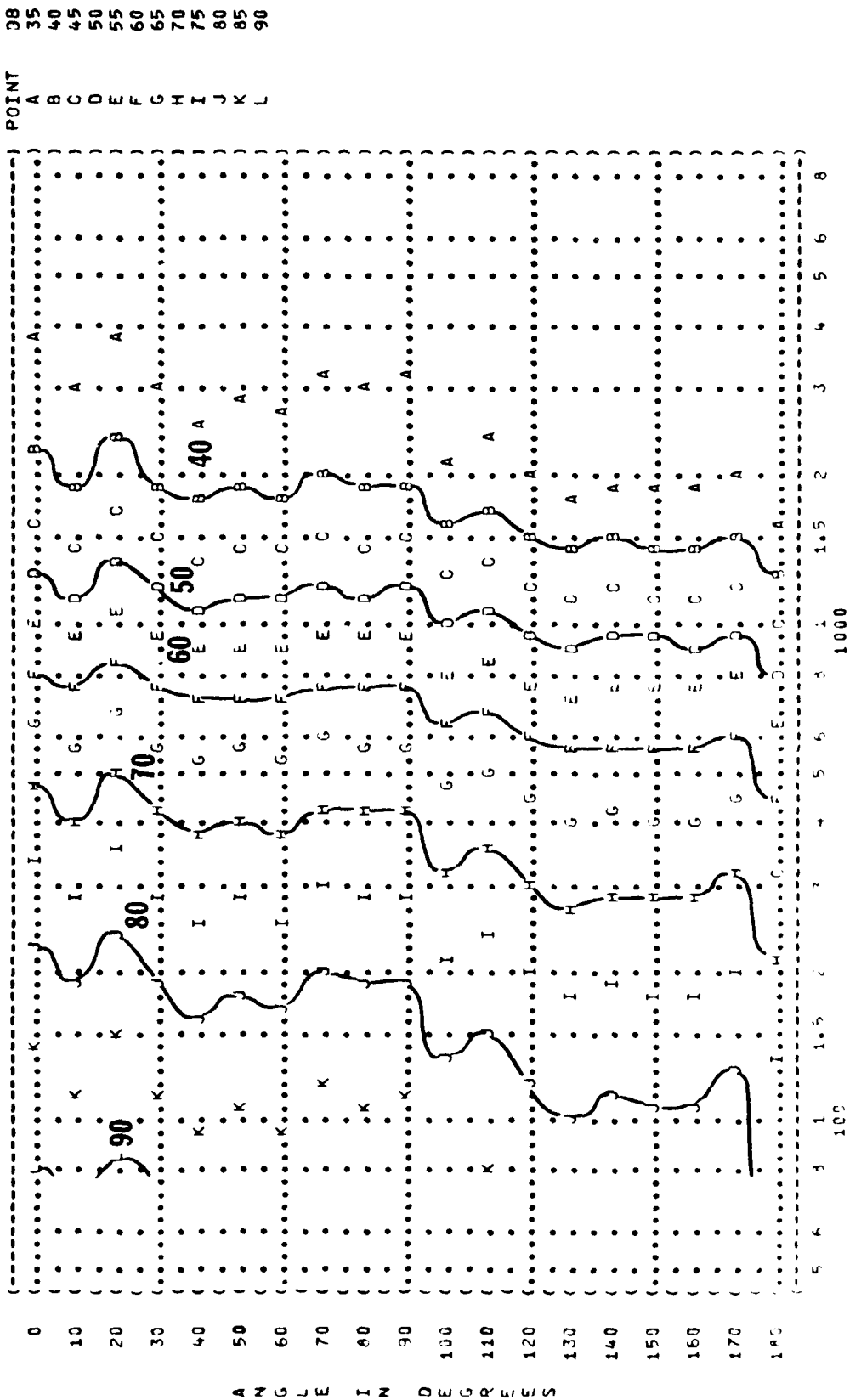
(FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (31.5 HZ OCTAVE BAND
 (11
 (NOISE SOURCE/SUBJECT:
 (A-7J AIRCRAFT IN THE
 (AF32A-19 SUPPRESSOR
 (ENGINE IF41-A-1
 (FAR FIELD NOISE
 (OPERATION:
 (MILITARY POWER, 96% RPM
 (SINGLE ENGINE
 (SUPPRESSED GROUND RUNUP
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 04
 (20 NOV 79
 (PAGE 18



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (CDB)
 (11 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (OPERATION: (METEOROLOGY:
 (A-70 AIRCRAFT IN THE (TEMP = 15 C
 (AF32A-19 SUPPRESSOR (SINGLE ENGINE (BAR PRESS = .760 M HG
 (ENGINE TF41-A-1 (SUPPRESSED GROUND RUNUP (REL HUMID = 70 %
 (FAR FIELD NOISE ((PAGE 19)



(FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (A-7J AIRCRAFT IN THE
 (AF32A-15 SUPPRESSOR
 (ENGINE TF41-A-1
 (FAR FIELD NOISE
 (OPERATION:
 (MILITARY POWER, 96% RPM
 (SINGLE ENGINE
 (SUPPRESSED GROUND RUNUP
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-833-001
 (RUN 04
 (20 NOV 79
 (PAGE 20



DISTANCE FROM SOURCE (METERS)

A N G L E I N D E G R E E S

FIGURE 1 SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (L9)
250 HZ OCTAVE BAND

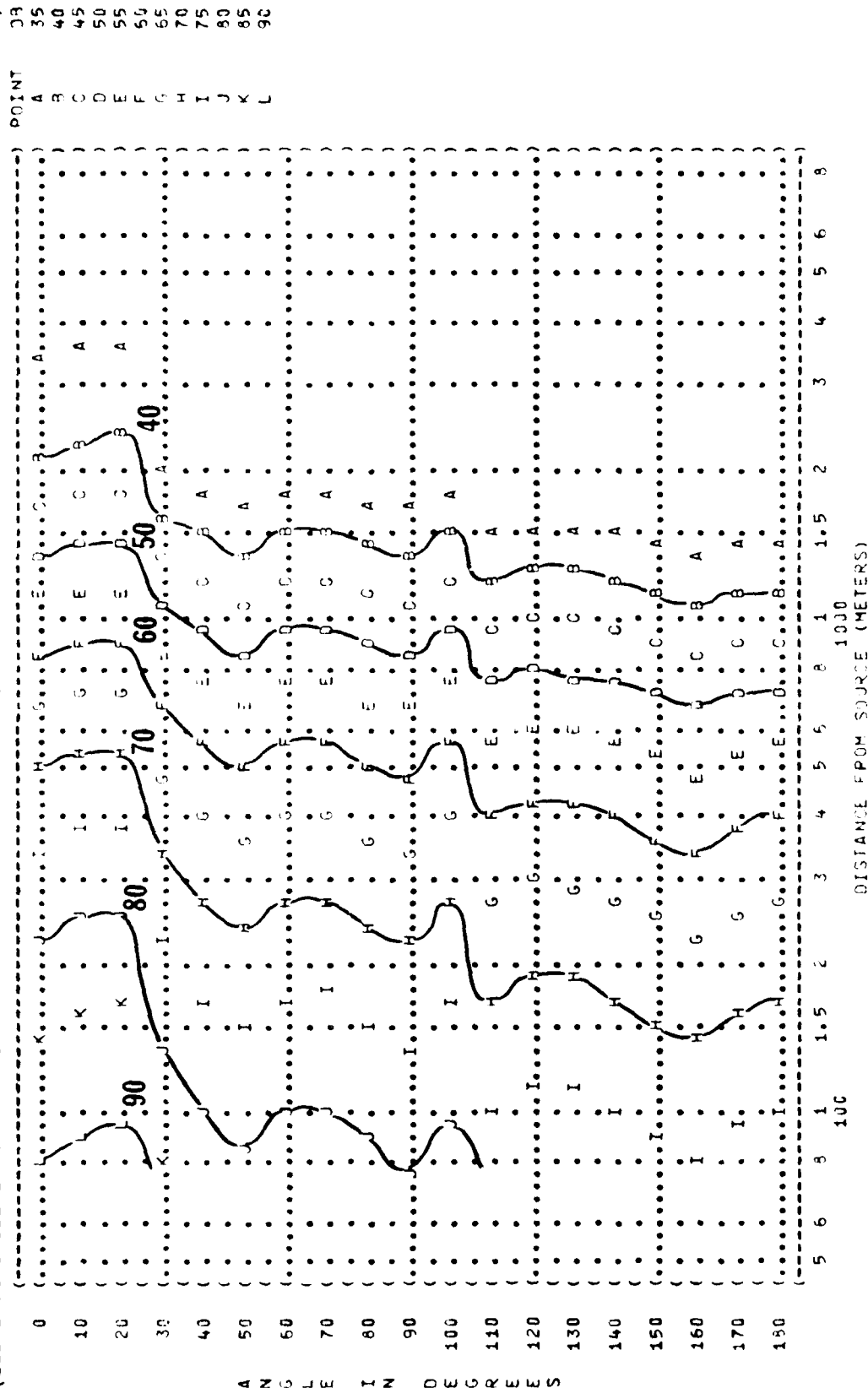
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NOISE SOURCE/SUBJECT:
A-70 AIRCRAFT IN THE
AF32A-19 SUPPRESSOR
ENGINE TF41-A-1
FAR FIELD NOISE

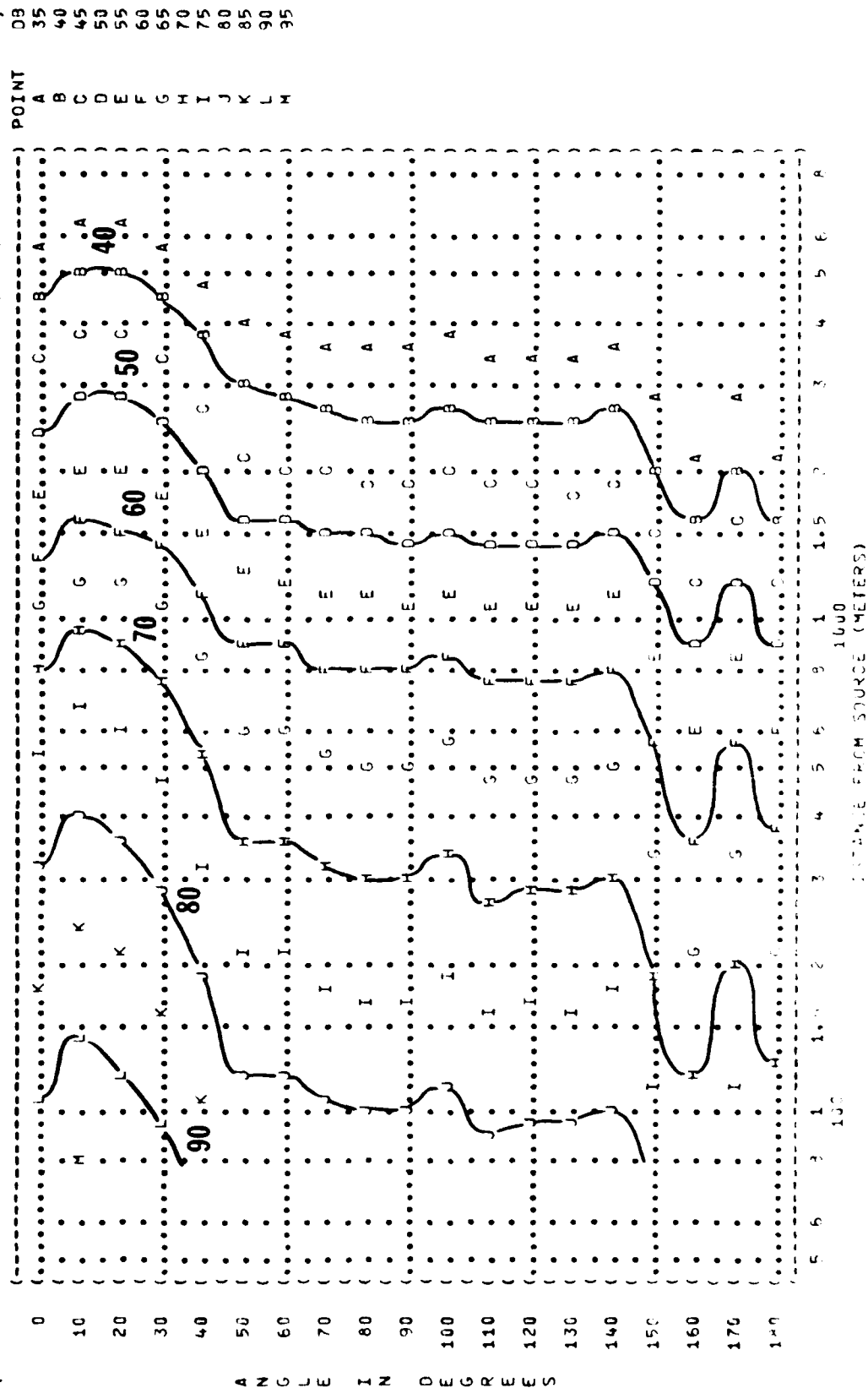
OPERATION:
MILITARY POWER, 96% RPM
SINGLE ENGINE
SUPPRESSED GROUND RUNUP

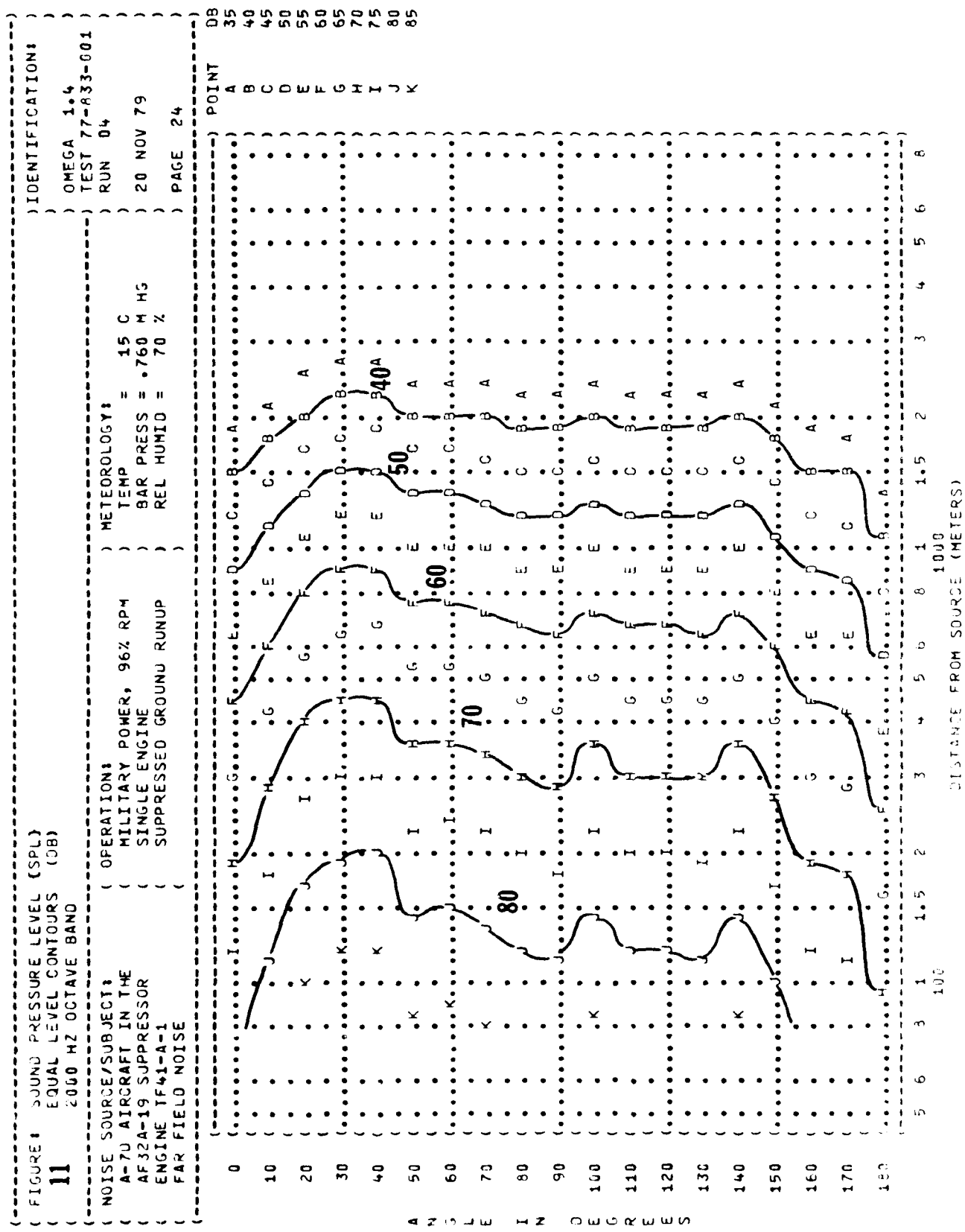
METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-33-001
RUN 04
PAGE 21

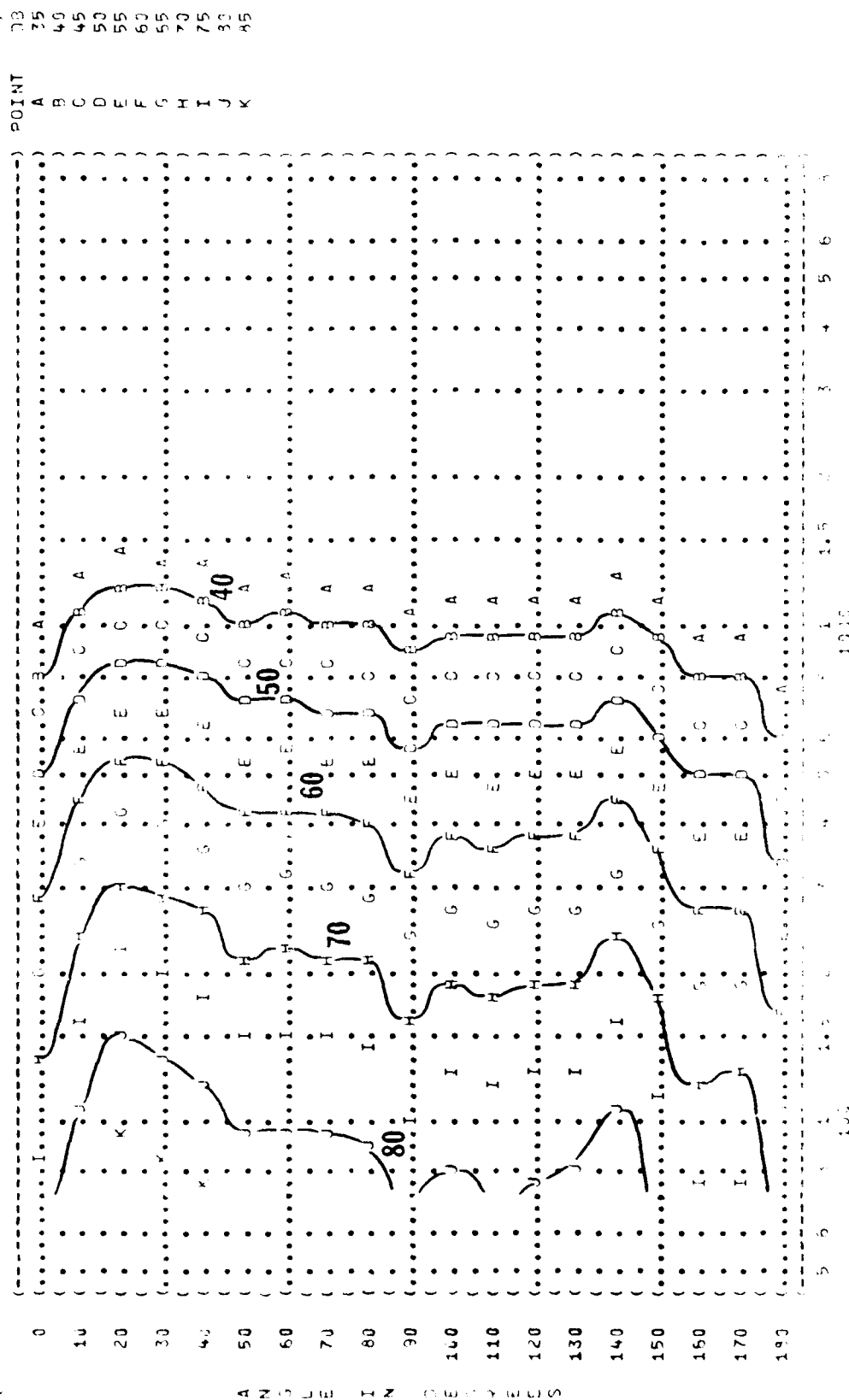


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (A-70 AIRCRAFT IN THE (MILITARY POWER, 96% RPM
 (AF32A-19 SUPPRESSOR (SINGLE ENGINE
 (ENGINE TF41-A-1 (SUPPRESSED GROUND RUNUP
 (FAR FIELD NOISE ()
 () IDENTIFICATION:
 () OMEGA 1.4
 (TEST 77-833-001
 (RUN 04
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M Hg
 () REL HUMID = 70 %
 () PAGE 22

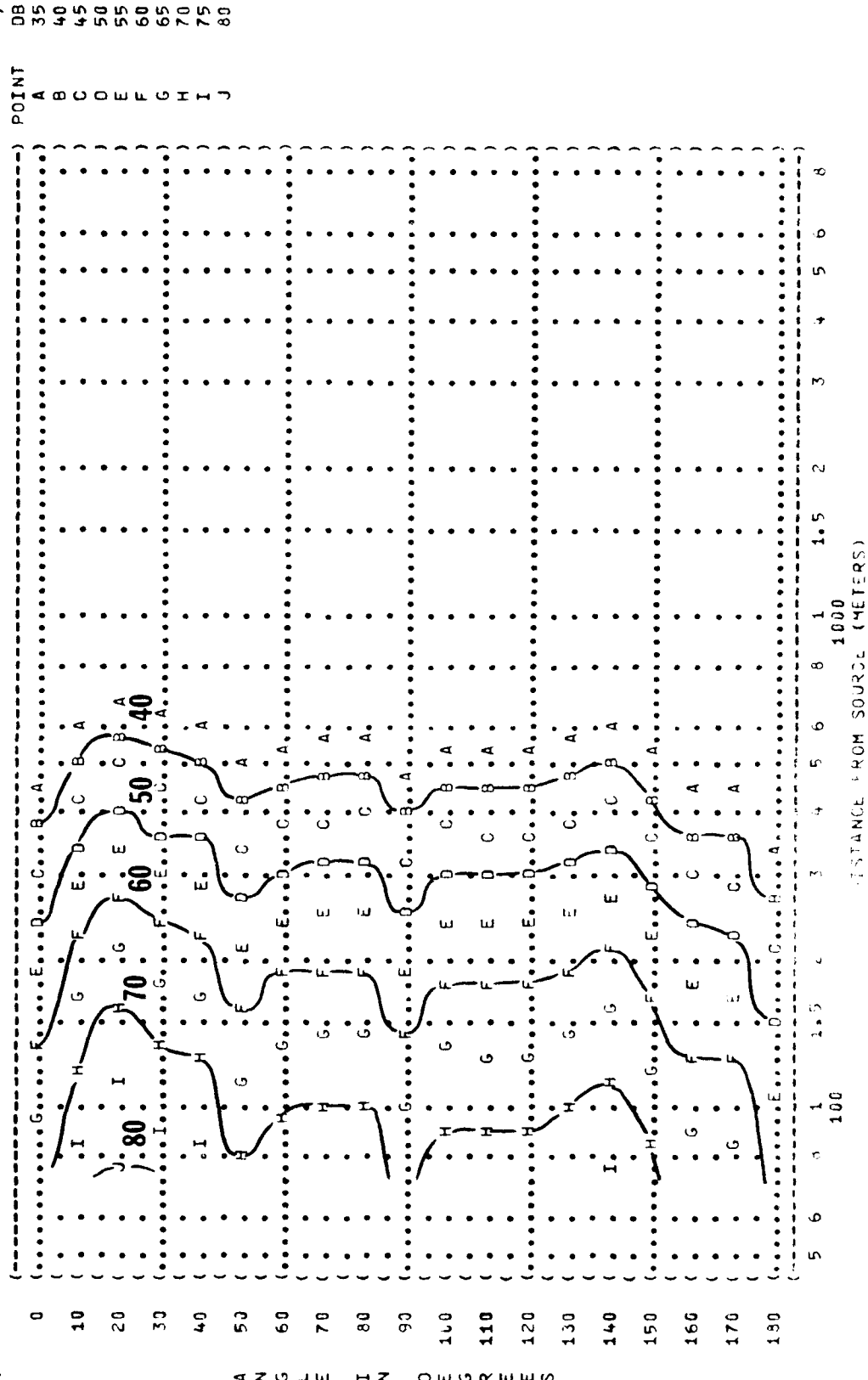




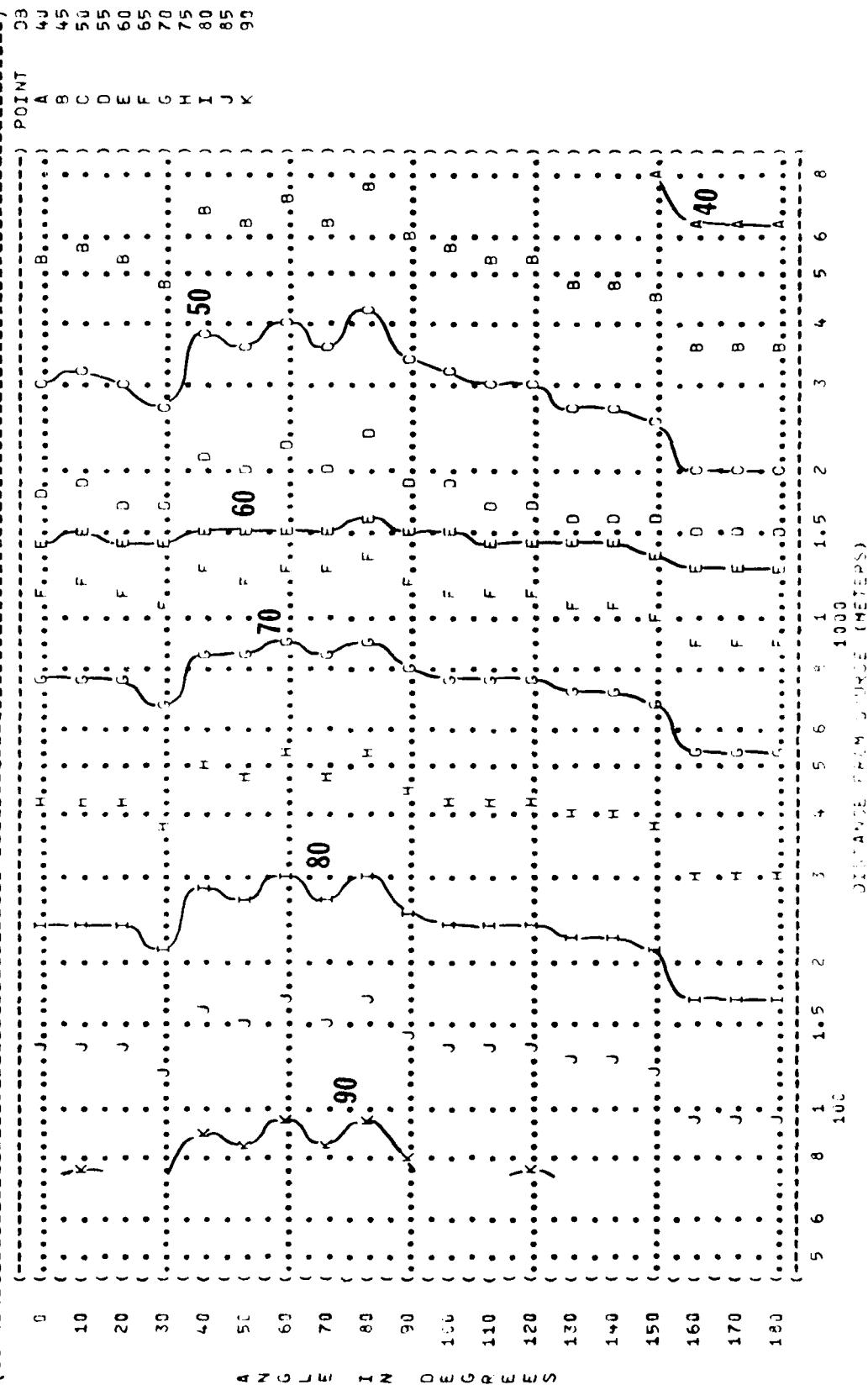
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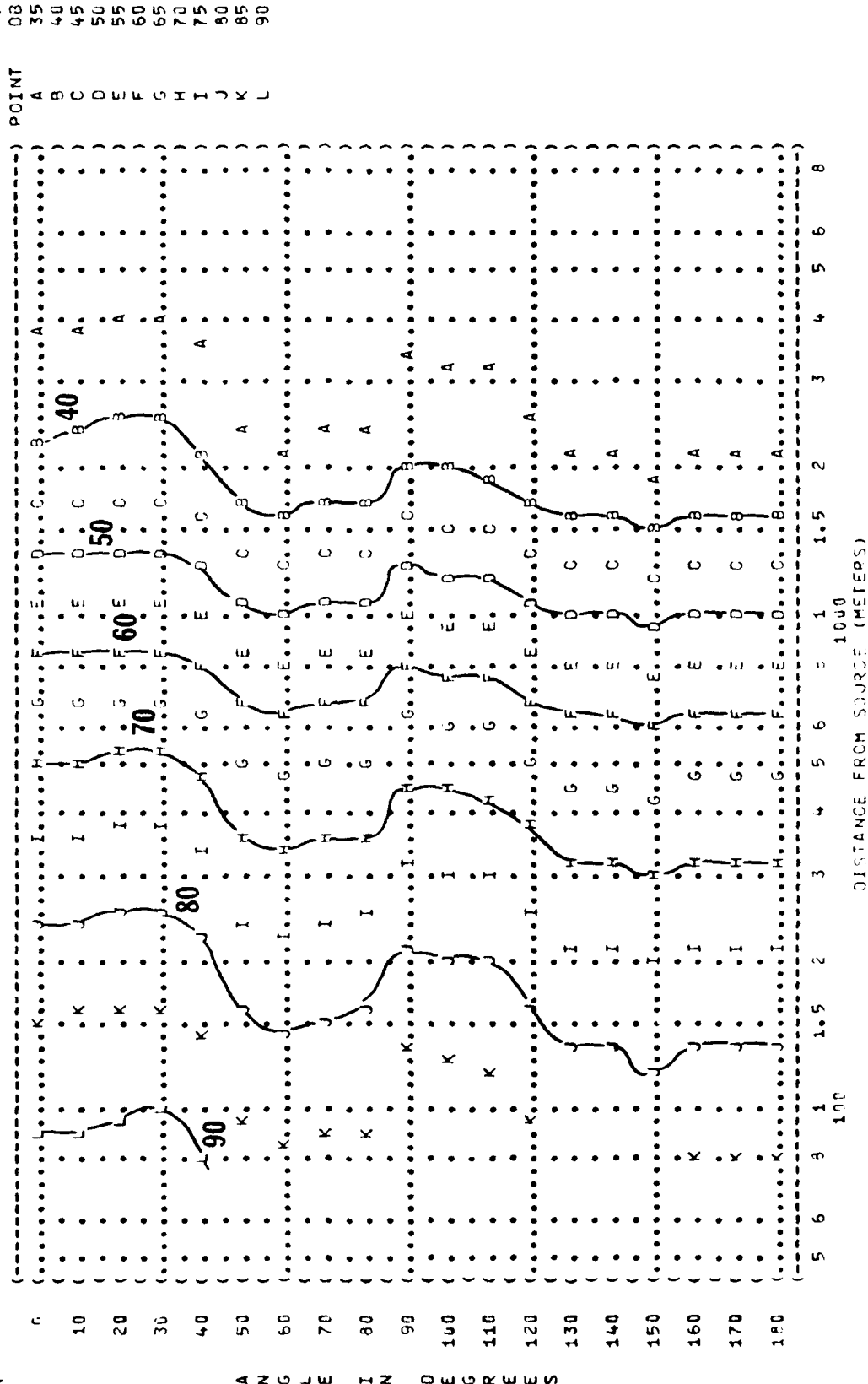
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (POINT DB
 (A-70 AIRCRAFT IN THE (MILITARY POWER, 96% RPM (TEMP = 15 C (A 35
 (AF32A-19 SUPPRESSOR (SINGLE ENGINE (BAR PRESS = .76J M HG (C 40
 (ENGINE TF41-A-1 (SUPPRESSED GROUND RUNUP (REL HUMID = 70 % (D 45
 (FAR FIELD NOISE ((((E 50
 (((((((((F 55
 (((((((((G 60
 (((((((((H 65
 (((((((((I 70
 (((((((((J 80



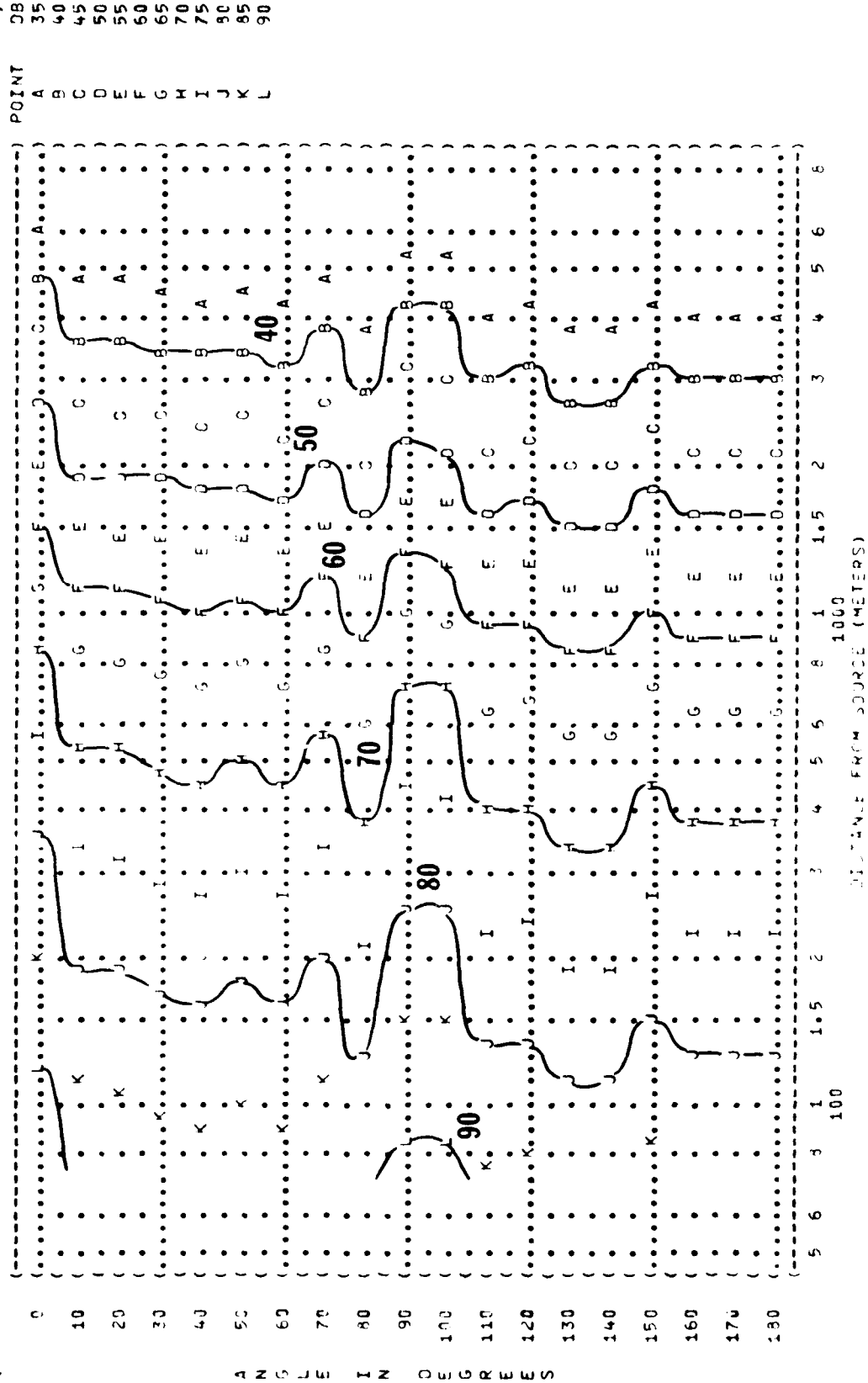
(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (CB))
 (31.5 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE IF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER (97.7%))
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 04)
 (20 NOV 79)
 (PAGE 18)



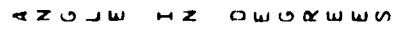
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (LB)
 (11 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 (A-7 AIRCRAFT IN THE (MILITARY POWER (97.7%)) TEMP = 15 C)
 (AF32A-24 SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG)
 (ENGINE TF41-A-1 (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %)
 (FAR-FIELD NOISE ()) PAGE 20)



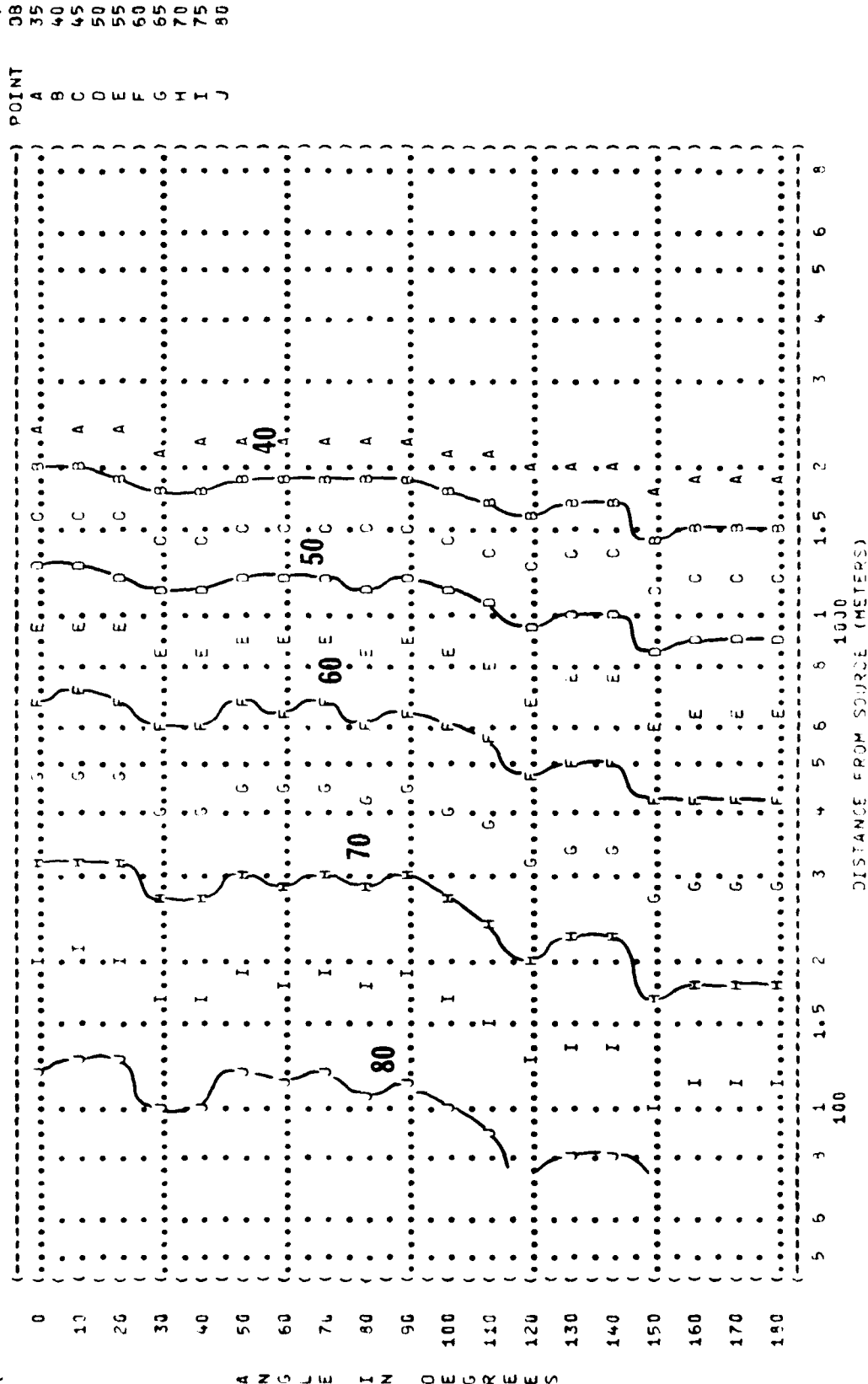
(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (L3))
 (11 510 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE YF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER (97.7%))
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN C4)
 (20 NOV 79)
 (PAGE 22)



11

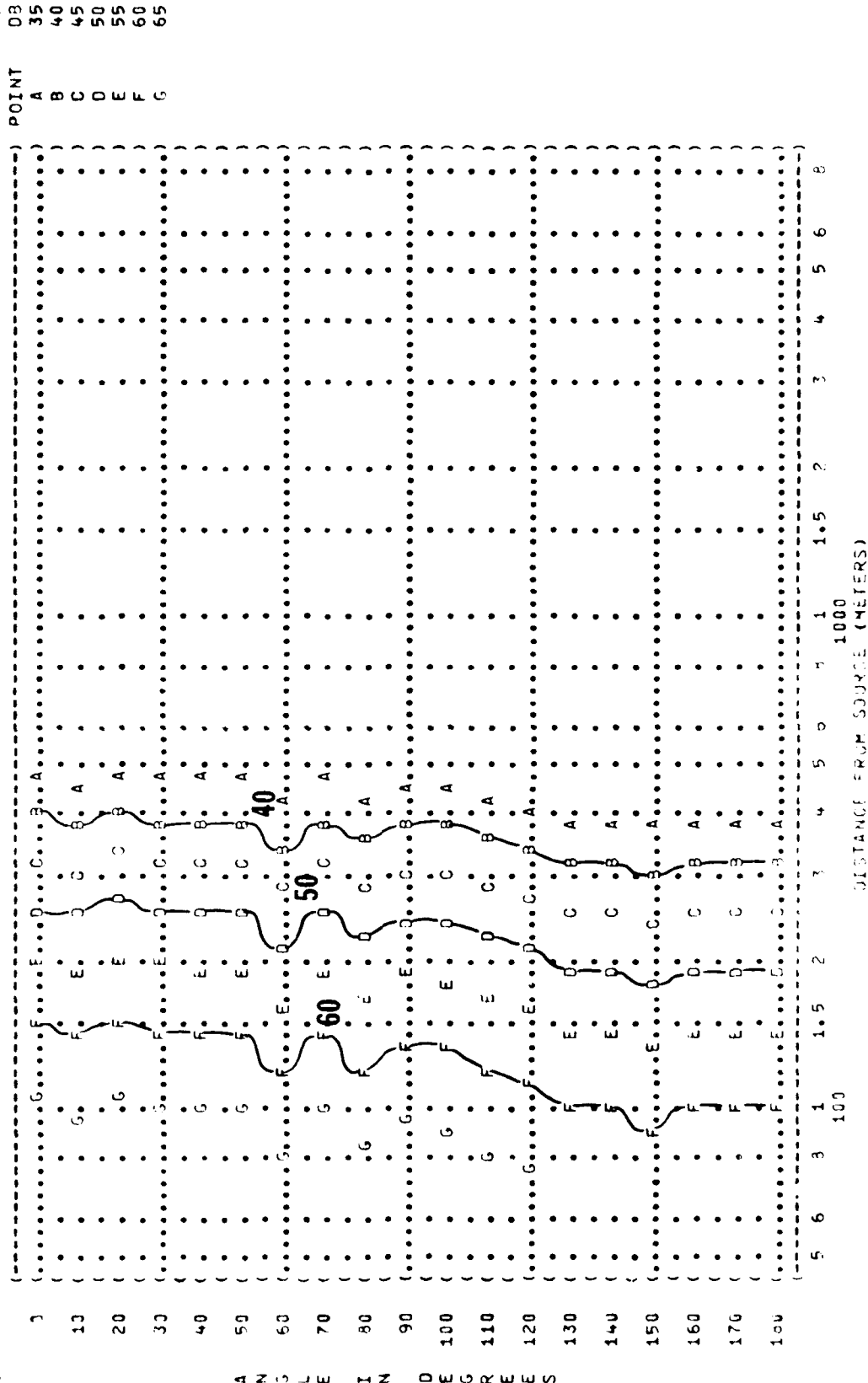


(FIGURE 1 SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (dB))
 (2000 HZ OCTAVE BAND)
 (11)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER (97.7%))
 (SINGLE ENGINE)
 (GROUND PUMP (SUPPRESSED))
 ()
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 ()
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 04)
 (20 NOV 79)
 ()
 (PAGE 24)
 ()



| POINT | 0B |
|-------|----|
| 0 | 0 |
| 10 | 10 |
| 20 | 20 |
| 30 | 30 |
| 40 | 40 |

(FIGURE 1 SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (CB))
 (8000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (A-7 AIRCRAFT IN THE)
 (AF32A-24 SUPPRESSOR)
 (ENGINE TF41-A-1)
 (FAR-FIELD NOISE)
 (OPERATIONS)
 (MILITARY POWER (97.7%))
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-833-001)
 (RUN 04)
 (20 NOV 79)
 (PAGE 26)



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